

MICROTIMES™

Personal Communicators From EO



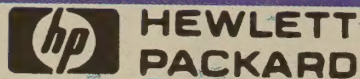
"The companies we work with have almost the same goals. They're trying to get more responsive. They want their employees to be in touch wherever they are. They are trying to reduce some of the paper overhead for people in the field."

*—Alain Rossman,
EO President*

Special
MultiMedia Section
Starts On Page 269

Savings Headquarters

FRY'S AND HP KNOW HOW TO MAKE WAVES!

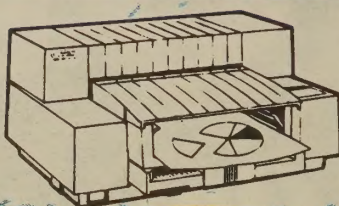


**HEWLETT
PACKARD**
Authorized Dealer
A 50 YEAR TRADITION OF QUALITY.
HP DELIVERS PC PRODUCTS YOU CAN DEPEND ON.

DeskJet 500C Color InkJet Printer

COLOR INKJET OUTPUT AT 300 DPI!

Prints in Color or
Black and White
100 Sheet Paper Feeder
Whisper Quiet
3 Year Warranty #1632480



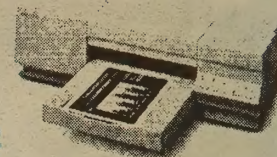
\$529⁹⁵

Color PaintJet

XL300

**HP C2856A
Color Graphics
Ink Jet Printer**

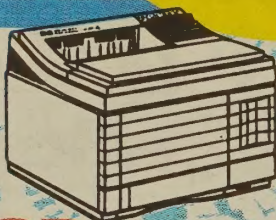
300 DPI Plain Paper
200 CPS NLQ
Prints on Transparency
Film & Paper
360 Colors addressable,
over 16.5 million color
available
#1688986



\$2299⁹⁹

LaserJet 4

Fast 8ppm printing for complex documents
45 Scalable Fonts • 2MB RAM
600 DPI Print Quality at a 300 DPI Price
300 Page Paper Capacity
Ideal for Windows & Graphics
Optional Full Network Capabilities
#1734140

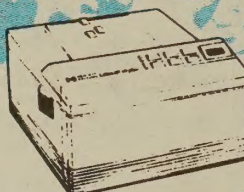


**CALL FOR
BEST PRICE**

LaserJet IIP+

**Personal Laser Printer with
the fastest "Business Speed"
in the business!**

4 Pages/Minute • PCL4
Parallel Interface
512K Expandable to 4.5MB
70 Page Input tray
#1625930



\$744⁹⁵

DeskJet 500 Inkjet Printer

300 DPI LASER QUALITY
Scalable Fonts for MicroSoft Windows 3.0
Water Resistant Ink
Character Kerning for Improved Letter Spacing
Whisper Quiet • Three Year Warranty
#1529128



\$365

LaserJet IIIP



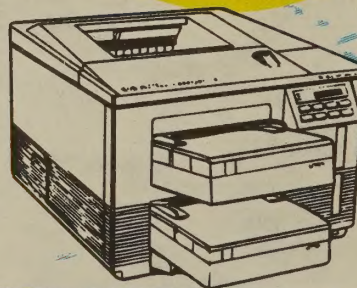
Resolution Enhancements Yield The Highest
Quality Laser Output! 8 SCALABLE Fonts
14 Bit-Mapped Internal Fonts • 1MB RAM
4 Pages/Minute • Serial/Parallel
Postscript Upgradeable #1584062

**Join the
Revolution in
Resolution!
You won't
believe it's not
600 DPI**

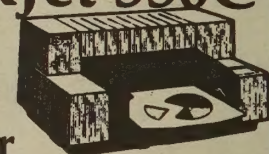
LaserJet IIISi

17 Pages Per Minute • 300 DPI Resolution
1MB Expandable to 17MB
2 Input Trays • 1000 Sheet Paper Capacity
14-Bit Mapped Fonts • 13 Scalable Typefaces
2 Font Slots • 4 Memory Slots #1567656
You won't believe it's not 600 DPI

**THE
PERFECT
NETWORK
SHARED
PRINTER!**



DeskJet 550C Color InkJet Printer



COLOR INKJET OUTPUT AT 300 DPI!
Prints in Color or Black and White at the same time
100 Sheet Paper Feeder • Serial/Parallel
13 Scalable Fonts for Windows • 84 DOS Fonts
Whisper Quiet • 3 Year Warranty
#1733703

\$724⁹⁵

Home of Fast, Friendly,
Courteous Service

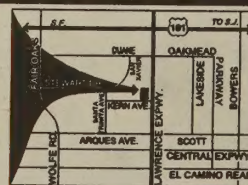
FRY'S ELECTRONICS

Prices good thru
March 1, 1993

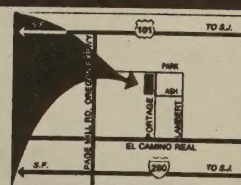
Limit Rights Reserved
Not Responsible For
Typographical Errors

STORE HOURS
MON-FRI
8AM-9PM
SATURDAY
9AM-8PM
SUNDAY
9AM-7PM

**VISA AND
MASTERCARD
ACCEPTED**
CORPORATE P.O. FAX #



SUNNYVALE
1177 Kern Ave.
(408) 733-1770
(408) 735-6800



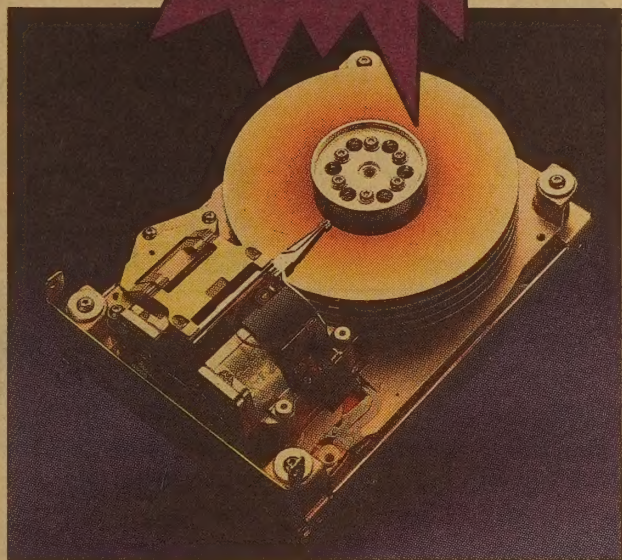
PALO ALTO
340 Portage Ave.
(415) 496-6000
(415) 496-6060



FREMONT
440 Mission Ct.
(510) 770-FRYS (3797)
(510) 770-3700

Huge Drive Sale!

\$495!



Micropolis 1578

330MB 16ms

SCSI Interface

Perfect for PC, Mac or Sun

BRAND NEW, 1-YEAR WARRANTY

Add just \$89 for full five-year extended warranty!

\$895!



Maxtor 8760S

640MB 16ms

SCSI Interface

Perfect for fast workstations and file servers
FACTORY REFURBISHED, 1-YEAR WARRANTY

Add just \$149 for full five-year extended warranty!

10 reasons . . .

to Buy From The Disk Drive Depot:

- Full selection of hard, optical and tape drives in one store!
- Quality disk drives at blowout prices!
- Custom built external subsystems
- SCSI controllers from \$29!!
- Volume discounts
- Over 200 drive types available!
- Optical drives from \$395!
- CD-ROMs in stock!
- Trade-in credits available!
- Knowledgeable sales staff

Stop in and visit our new store!

Grand Opening!



Located opposite Fry's Electronics on Lawrence Expressway

DISK DRIVE DEPOT

We sell only Factory New, Factory Refurbished, and CSC Refurbished drives.

No surplus "used and abused" disk drives sold here!

500 Lawrence Expressway
Sunnyvale, California 94086

(408) 738-3895

TENS OF THOUSANDS OF OUR SYSTEMS SOLD SINCE 1983 ARE STILL IN USE!!

BUSINESS IS BOOMING!

IBM • Apple® • COMPAQ®
NEC • TOSHIBA • H.P.
AST • ALR • NOVELL
COMPUTERS...CALL FOR BEST PRICES!!

MYLEX • AMI • ORCHID
MADE IN U.S.A. MOTHERBOARDS
CALL FOR BEST PRICES!!

486-50 MHz BASE SYSTEM LOCAL BUS

Motherboard + Case
 + Power Supply
 + 101 Keyboard
 + 1MB + 1.2 Floppy
 + INTEL 486-50 DX2 CPU
ONLY

\$899

COMPUTERS

**CALL FOR BEST
AVAILABLE PRICES!!**

AT&T	MYLEX
ALR	MICRONICS
ACER	MITAC
AMI	NEC
APPLE	PANASONIC
AST	PACKARD BELL
COMPAQ	SUN
EVEREX	SAM
EPSON	WORKSTATION
FORA	SAMSUNG
LEADING	TAXAN
EDGE	TOSHIBA
MITSUBISHI	ZENITH

BUSINESS SPECIAL

486/50/66

- 200 MB
 - 1.2 & 1.44 MB FLOPPY
 - 8 MB RAM + FAX/MODEM
 - TAPE BACK-UP
 - VGA CARD
 - VGA MONITOR
 - SCO UNIX
 - NETWORKING
- LEASE OR FINANCE
FROM
\$100 PER MONTH**

NETWORKING

**WE DESIGN
AND INSTALL
NOVELL
LANTASTIC
3 COMM
BANYAN
SCO**

WE WILL BUILD YOUR
NETWORK WE WILL USE WHAT
YOU HAVE & ADD WHAT
IS NEEDED

NOTEBOOK

**486-33
w/130 MB
HARD DRIVE**

\$2299
 TOSHIBA,
 APPLE, NEC,
 ALR, & MORE
 ALL AVAILABLE

WORLD'S BEST PRICE!

ACS 486-33 MHz .. \$1190

- | | |
|---|--|
| • 4 MB RAM Expandable to 32 MB On Board | • 16-Bit SVGA Card |
| • 120 MB, 16ms Hard Drive | • 14" SVGA Color, 1024x768, 0.28mm Dot Pitch Display |
| • 1.2 MB, 5 1/4" Floppy Drive | • Clock/Calendar with Battery Back-up |
| • 1:1 Interleave 2 Hard/2 Floppy Drive Controller | • 8 Expansion Slots |
| • 2 Serial, 1 Parallel, 1 Game Port | • 3 Button, Hi-Resolution Serial Mouse |
| | • CYRIX CPU |

OPTIONS

- | | |
|------------------------------|---------------|
| • 200/340 MB Hard Drive..... | Add \$200/425 |
| • Viewsonic 6 Monitor | Add \$95 |
| • Tseng Chip VGA Card..... | Add \$80 |
| • Orchid IIS w/1 MB | Add \$95 |
| • Memory Per Megabyte..... | Add \$40 |

HARD DRIVES

100 MB DRIVE	\$255
120 MB DRIVE	299
200 MB DRIVE	450
670 MB DRIVE	1290
1.2 GIGA DRIVE	1780
1.2 GIGA TAPE B-UP ..	1690

PLOTTERS/ DIGITIZERS

SUMMA SKETCH .. \$325
 CALCOMP **BEST PRICE**
 HITACHI ROLAND
 HP MICROTEK
 KURTA LOGITECH
 ALL PLOTTERS & DIGITIZERS

MONITORS

**LARGE MONITORS
 20", 21", 37"
 ALL MODELS
 ALL BRANDS
 CALL FOR
 BEST PRICES**

PRINTERS

LASER

HP LASER IV **\$1375**
 IBM FUJITSU
 APPLE QUME
 EPSON PANASONIC
 OKIDATA NEC
 QMS

ADVANCE

COMPUTER SYSTEMS

**Delivery & Installation Available
 3 LOCATIONS TO SERVE YOU**

SUNNYVALE - 665 GRAPE AVE. (408) 732-6200 • FAX: (408) 749-9449
WALNUT CREEK - 1987 N. MAIN ST. (510) 945-8011 • FAX: (510) 945-4941
SAN FRANCISCO - 1231 MARKET ST. (415) 552-2902 • FAX: (415) 552-2904

- (A) Prices subject to change w/o notice
 (B) Financing Available
 (C) Not responsible for typo error
 (D) Installation Extra

- (E) Subject to stock on hand
 (F) Prices vary at stores
 (G) Toner extra
 (H) Visa, mastercard

SPECIAL FOR ENGINEERS/SOFTWARE DEVELOPERS

Used By AT&T

To Demonstrate Their
UNIX Systems, Release 4
At UNIX Symposium
Dallas, New York & London

Used By Santa Cruz Operation-



The world's largest UNIX software
developer-to exhibit their software at
UNIXFORUM 1990, Washington, DC. THAT
IS HOW GOOD OUR COMPUTERS ARE!



1st
Fault Tolerant
486-66 MHz System
Available in the
World

GRAPHICS WORKSTATION

- 37" MONITOR
- 486-66 MHz
- 32 MB RAM
- CD ROM
- 1.2 GIGA HARD DRIVE
- 1.2 GIGA TAPE BACK-UP
- 32 BIT VIDEO CARD
- COLOR LASER PRINTER
- VENTURA, GEM PHOTOLAB

CALL FOR PRICE

PORTABLE 486-66

- Up to 66 GIGA Hard Drive
- Up to 96 MB RAM
- Good for UNIX, NOVELL, DOS, OS/2

CALL FOR PRICE



486 EISA/ISA/LOCAL BUS PORTABLE

SAM 486 WORKSTATION

- 486-66 MHz EISA/LOCAL BUS
- 256K CACHE
- 32 MB Memory EXPANDABLE TO 96 MB
- 20"/37" MONITOR
- 1280x1024 TISA
- AUTO CAD
- 32 BIT NETWORK CARD
- DIGITIZER/PLOTTER
- MULTIMEDIA
- 2.2 GIGABYTE SCSI HARD DRIVE CONFIGURED (EXPANDABLE TO 50 GIGABYTE)
- 1 GIGABYTE TAPE EXPANDABLE TO 50 GIGA
- SERVER CASE
- UNIX/NOVELL/OS-2/DOS/3COM

COMPLETE SYSTEM

WORLD'S BEST PRICE FOR A NETWORK!

Peer to Peer

(A) FILE SERVER

- 486-66 MHz WITH 256K CACHE
- 340 MB HARD DRIVE
- 16 MB RAM
- 1.2 MB AND 1.44 MB FLOPPY DRIVE
- NETWORK INTERFACE CARD
- NOVELL NETWARE 3.1.1.5 USER
- SVGA CARD AND 14" COLOR MONITOR

OPTIONS: (1) 500 MB TO 50 GB HARD DRIVE CAPACITY AND TAPE DRIVE (2) MEMORY UP TO 96 MB (3) CD-ROM (4) MAGNETOPTICAL DRIVE (5) MONITORS (6) HOST ADAPTERS

(B) WORKSTATION

- 486-33 MHz WITH 64K CACHE
- 120 MB HARD DRIVE
- 2 MB RAM
- 1.2 MB FLOPPY DRIVE
- SVGA CARD AND MONITOR
- NETWORK INTERFACE CARD

- **PACKAGE 1 FILE SERVER AND 4 WORKSTATIONS ..\$9,992**
- **EACH ADDITIONAL WORKSTATION\$1,392**

COMPATIBLE WITH NOVELL, UNIX/XENIX, OS/2, MS DOS, LAN MANAGER, MULTI-USER DOS, LANTASTIC, WINDOWS AND OTHER MULTI-USER/MULTI-TASKING OPERATING ENVIRONMENTS.

ADVANCE

COMPUTER SYSTEMS

3 LOCATIONS TO SERVE YOU

SUNNYVALE
665 Grape Ave.
(408) 732-6200
Fax: (408) 749-9449

WALNUT CREEK
1987 N. Main St
(510) 945-8011
Fax: (510) 945-4941

SAN FRANCISCO
1231 Market St.
(Inside San Francisco
Hotel Mezzanine Floor)
(415) 552-2902
Fax: (415) 522-2904

Leasing & Financing Available

TABLE OF CONTENTS

A NOTE FROM THE EDITORS

The huge portable computing market has taken some interesting turns lately as enterprising developers try to reach users whose needs aren't being met by current notebook-computer technology.

High on the list are corporate employees, from engineers to outbound sales forces, who remain somewhat technophobic and have some fundamentally different requirements from their desk-bound counterparts.

While many startups have sprung up recently to exploit the possibilities of pen-based interfaces and wireless communications in these markets, Mountain View-based EO is one of the first to come out with an actual product. Currently in beta test at several Fortune 500 companies, and due for volume shipment in Q2 of this year, EO's Personal Communicators offer unprecedented capabilities and ease of use.

Will EO and its Communicators succeed? It is, of course, too soon to tell. But in our cover story, president Alain Rossman, whose track record includes the Macintosh, Radius, and C-Cube, is realistic about the difficulties and upbeat about the promise of the new market.

—ME

NEWS AND VIEWS

Letters	18
Industry Insight <i>By Paul Hoffman</i>	22
<i>Novell Buys UNIX</i>	22
<i>Apple's Printer Bargains</i>	26
<i>SCO President Resigns Amid Harassment Charges</i>	26
<i>MicroTimes Stock Index</i>	29
Realizable Fantasies <i>By Jim Warren</i>	30
Public access to public records.	
Dvorak's Last Column <i>By John C. Dvorak</i>	302
Dvorak's weird fantasies about Microsoft continue...	

BUSINESS SOLUTIONS

Pens and Palmtops <i>By Mitsu Hadeishi</i>	36
Sharp's latest and biggest Wizard, the OZ-9600.	
Laptops <i>By Ed Kahn</i>	44
Warranty considerations, and IBM's new ThinkPad notebook.	
Freestanding Telework Centers <i>By Robert Moskowitz</i>	48
Satellite centers, executive centers, and shared office sites as implementations of telecommuting.	
Accounting Systems For Small Retailers <i>By David A. Simon, CPA, and Jennifer Robin Cherniss</i>	56
Tax and accounting problems and solutions for resellers.	
UNIX <i>By Bennett Falk</i>	62
English to Pig Latin conversion: an unusual application for sed and grep.	
Tools For Doing Your Taxes <i>By Robert Moskowitz</i>	67
How your spreadsheet and database software can help you at tax time.	

FEATURES

BMUG <i>By David Morgenstern</i>	114
The strange tale of the Aliens 4 virus.	
Special Book Excerpt: Task Switching And Multitasking—What's The Difference? <i>By Lenny Bailes and John Mueller</i>	123
From <i>Memory Management and Multitasking Beyond 640K</i> .	
FileMaker Meets Hurricane Andrew <i>By Cynthia Johnston</i>	126
How the Claris database helped streamline the process of disaster relief.	
Toward The Virtual Factory <i>By Ernest R. Tello</i>	149
Virtual reality meets the manufacturing process with new	

PREVIEW:

Third Conference on Computers, Freedom, and Privacy Story starts on page 106

Coming to the Bay Area March 9-12, this unique event brings together distinguished experts from various constituencies, from law enforcement and system administrators to civil libertarians, to discuss issues and policies in the evolving electronic frontier.

COVER STORY



A Little Paradigm Shift

Personal Communicators From EO ...80

By Mary Eisenhart • Photos courtesy of EO
 Wireless, pen-based communicators? EO president Alain Rossman, one of Apple's first software evangelists, discusses the joys and pitfalls of leading-edge startups with revolutionary technology.

software from Autosimulations.

Locating Addresses On The Internet, Or, Find Your Friends And Email

Your Enemies *By Kevin M. Savetz* 178
 Internet address listings and how to use them.

An Envelope Addresser That Works *By Ed Kahn* 186
 AddressMate, a lifesaver for mailing jobs.

PRODUCT SPOTLIGHT

Product Updates 195

Reviews

Games *By Mike Markowitz*

<i>WaxWorks</i>	195
<i>Reading Adventures in Oz</i>	196
<i>Mario Is Missing!</i>	196
<i>Kid Cuts</i>	198

Amiga Software

<i>Charts&Graphs</i>	198
<i>Presentation Master</i>	261

Micro Marketplace

Special Advertising Section For Bay Area Computer Buyers Starts On Page 90

Continued

Challenge the Limits !



**BEST PRICE
BEST SERVICE
BEST PRODUCTS**



Complete Systems Include:

- 4Mb Memory
- 1.44Mb and 1.2Mb TEAC Floppy Drive
- 1:1 FD/HD Controller w/2serial,Parallel,Game
- S-VGA Card (512K) w/S-VGA Monitor 1024X768 (0.28DP)
- 101 Enhanced Keyboard
- DeLuxe Mini Tower Case

	120Mb HD	213Mb HD
486-50Mhz Micronics EISA	\$2399	\$2499
486DX2-66Mhz Local Bus	\$1649	\$1749
486DX2-66Mhz	\$1599	\$1699
486-50Mhz	\$1549	\$1649
486-33Mhz	\$1299	\$1399
486SX-25Mhz	\$1139	\$1239

Windows Workstation SALE !

Include:

- 4Mb Memory; 64K Cache
- 1.44Mb TEAC Floppy Drive
- 120Mb CONNER Hard Drive
- 1:1 FD/HD Controller w/2S/P/G
- S-VGA Card (512K)
- S-VGA Monitor 1024X768 (0.28DP)
- 101 Keyboard
- Mini Tower Case with 200W P.S.

486-33Mhz

**Free
Windows
3.1**

\$1299

Special of the Month

Include:

- 4Mb Memory; 64K Cache
- 1.44Mb TEAC Floppy Drive
- 120Mb CONNER Hard Drive
- S-VGA Card w/512K
- 14" S-VGA Color Monitor 0.28dpi
- 1:1 FD/HD Controller w/2S/P/G
- 101 Enhanced Keyboard
- DeLuxe Full Size Tower Case

486-66/50Mhz

**Free
Mouse**

\$1599/1549

SPECIAL UPGRADES

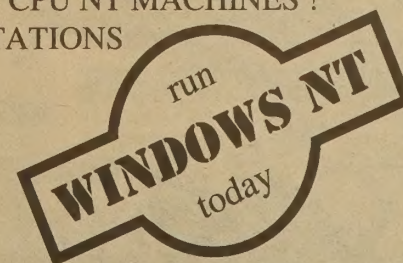
- Microsoft's Sound System.....\$195
- Sound Blaster Pro Sound Brd....\$155
- 120Mb IDE 17ms Hard Drive...\$268
- 213Mb IDE 15ms Hard Drive...\$349
- 340Mb IDE 15ms Hard Drive...\$599
- VGA to NTSC converter.....\$495
- VGA to NTSC Conv.for laptops..\$259
- 9600/2400 Fax/Modem.....\$75
- 2400 Baud Modem.....\$35
- 8 port active hub (coax).....\$120
- 8 bit ethernet card.....\$80
- CMGP Card w/2Serial,Parallel..\$10
- Slim Case with P/S.....\$40
- 101 Keyboard.....\$20
- SONY CD-ROM Drive.....\$299

WINDOWS NT DEVELOPERS WORKSTATION !!!

ATTENTION NT DEVELOPERS, CORPORATE USERS !

**WE HAVE SINGLE AND MULTIPLE CPU NT MACHINES !
SERVERS OR WORKSTATIONS**

- FOR SOFTWARE DEVELOPERS
- DOWN SIZING
- NETWORKING
- ENGINEERING



GET YOUR WINDOWS NT SYSTEM FROM THE NT PEOPLE !

Our Satisfied NT Customers: Hitachi Corp.; Hewlett Packard; University of BP.; etc...

CALL:408/524-9091

Terms and Conditions:

All prices reflect cash discount. One Year Warranty on Parts and Labor. 30 Day Satisfaction Guaranteed on all products. All returns are subject to approval. 15% restocking fee for all returns. All prices subject to change without notice. Not responsible for typos.

AMS

← N
FRWY 101
Oakmead
AMS
FRY'S

Since 1986

538 Oakmead Pkwy. Sunnyvale California 94086

TABLE OF CONTENTS

Multi & Media b e y o n d

Multimedia & Beyond 269

The communications revolution that started with desktop publishing is now making graphics, animation, sound, and video integral to business, social, and entertainment-oriented communications. With each issue of *MicroTimes*, Multimedia & Beyond brings you up-to-date information on new products and innovative applications in the digital media field.

Amiga Morph Mania *By Douglas J. Nakakihara* 270

Great morphing effects, even for the budget-minded.

Preview: ATXPO '93 276

The first expo to focus on the multiple facets of PostScript technology.

Apple's Full-Color Solutions *By Tony Reveaux* 280

New printers, and revolutionary new Ofoto software from LightSource.

Clip Media, Copyright, And Consumers *By Matthew Leeds* 290

CD-ROM-based multimedia collections are becoming a mass market—and going through a period of adjustment.

Artware *By Judy Malloy* 293

Intelligent, responsive works of art.

RESOURCES

Calendar of Events 203

User Group Network 220

This month's BBS spotlight: Windows Online

Classifieds 246

City-Based Index Of Advertisers 298

Index Of Advertisers 300

WANTED: EXCESS INVENTORY

**We Buy & Sell Excess Inventory • PC's & Related Parts
 Hard Drives • Memory • IC's • Software • OEM Products
 We Specialize In Asset Recovery**



**WE
 PAY BIG
 \$\$\$
 FOR
 EXCESS
 INVENTORY**

Strata Remarketing

"We cover the stratosphere of your Computer Needs"

46560 Fremont Blvd. #302
 Fremont, CA 94538
 Dealer Inquires Welcome

(510) 656-9848

Fax (510) 656-9891

Hours M-F 9:30-6 SAT by Appointment
 Showroom by Appointment Only

KING STAR COMPUTER, INC.

VLB-VESA LOCAL BUS 486-33MHz/256K

- Two Local Bus Motherboard from Basic System Made In USA
- 4MB to 32MB SIMMS
- ET 4000 Tseng Lab VESA
- 200MB Hard Drive 15ms
- 14" SVGA Monitor 0.28 1024x768

\$1546

Landmark 166.85 MHz Basic System Opti

486 DX-50 MHz EISA w/256K Cache

\$960

Landmark 111.10 MHz Basic System Opti

486 DX-33 EISA w/256K Cache

\$795

Landmark 167.22 MHz Basic System Opti

486 DX-50 ISA w/128K Cache

\$795

Landmark 111.44 MHz Basic System

486 DX-33 ISA w/64K Cache

\$625

Landmark 62.39 MHz Basic System

386 DX-40 w/64K Cache

\$330

Landmark 54 MHz Basic System Opti

386 DX-33 w/64K

\$325

Landmark 30 MHz, Basic System OPTI

386 SX-25 MHz/33 MHz + \$10

\$279

Landmark 30 MHz, Basic System OPTI

386 DX-25 MHz

\$329

Landmark 16 MHz, Basic System

286-12 MHz/20 MHz + \$10

\$235

Landmark 108 MHz, Basic System OPTI

3486DLC-33 w/128K Cache

\$465

Landmark 16 MHz, Basic System with 1MB

486DX2-66 MHz/256K VESA

\$970

BASIC SYSTEM INCLUDES

Motherboard & CPU • 1MB of Memory • 1.2MB or 1.4MB Floppy Drive
2 Serial • 1 Parallel Port • 1 Game Port • Case w/ Power Supply
1:1 2HD/2FD Controller • 101 Enhanced Keyboard

486-33 MHz 128K

- Basic System Configuration
- 200 MB Hard Disk IDE 18ms
- 14" SVGA Monitor/Impression SVGA Card w/512K

\$1,258

486-50 MHz 128K

- Basic System Configuration
- 200 MB Hard Disk IDE 15ms
- 14" SVGA Monitor/Impression SVGA Card w/512K

\$1,425

386-40 MHz 64K

- Basic System Configuration
- 120 MB Hard Disk IDE 18ms
- 14" SVGA Monitor/Impression VGA Card w/512K

\$815

386SX-25 NOTEBOOK

- 80386SX-25 MHz/387SX Socket
- 2 MB RAM to 6 MB
- 1.44 MB Floppy Disk Drive
- 60 MB Hard Drive
- Serial/Parallel Port/Clock

HALIKAN **\$1,089** 80 MB+\$40

MONTHLY SPECIALS

250 MB Tape Back-Up Archive	\$199
CD-ROM Software 5 Pc	89
14" SVGA Monitor/SVGA Card 512K	249
386DX-40 MHz/64K MiniBoard/CPU	159
ATI Ultra Plus w/2 MB	295
200 MB IDE	305
105 MB IDE 13ms	219
170 MB IDE 16ms	249
240 MB IDE 9ms QUANTUM	385

DRIVES

40 MB IDE	\$140
ST-251-1 40 MB (MFM)	230
80 MB IDE	179
105 MB IDE 13ms	219
120 MB IDE	235
200 MB IDE Maxtor/Conner	336
175 MB Conner	249
200 MB SCSI Quantum	428
340 MB WD IDE	515
340 MB Maxtor IDE	566
1.2 GB Maxtor S/E P0125	1350
1.7 GB Maxtor S/E P1-17	1699
676 MB Maxtor E/S	1068
425 MB IDE QTM 256K	860
425 MB Fujitsu/S	827
520 MB Fujitsu SCSI	879
1200 MB Fujitsu SCSI	1317
2055 MB SCSI	2149

MONITORS

15" Mag SVGA (1280x1024) 0.26	\$575
14" Mono Monitor	94
14" VGA Mono	100
14" SVGA .28 (1024x768)	248
14" SVGA .39 (1024x768)	215
14" VGA .51 (640x480)	179
Viewsonic 1 .39	225
Viewsonic 4 .28	295
Viewsonic 5E .28	394
Viewsonic 5+ .25	484
Viewsonic 6 Non .28	324
Viewsonic 6FX 15"	580
17" Viewsonic 7 .28	980
20" Viewsonic 8 .25	1510
Impression Non-In 1024x768 0.28	289
NEC 3FG/4FG	635/745
NEC 5FGX 17"	1395
Sony 1304	574
Sony 1604 16"	1025
Samsung 15" .28	485
Samsung 17" .31 (1280x1024)	845
Mitsubishi 17" D/P (TS56070S)	1055
Mitsubishi 20"	1795
Nanao T660i/550i	2399/1075
Impression 17" .28 1280x1024	865

KEYBOARDS

101 Keyboard/Mini	\$22/19
Keytronic 101 Key	33
Fujitsu 101 Key 4700	40
Maxi-Switch 101 Key	30
Chicony Click 101 Hi	30
Small 101 Keyboard	19
OmniKey 101/102	67

MOTHERBOARDS + CPU

486DX-66 MHz 128K/CPU	\$687
486-50 MHz EISA/CPU/256K	751
486-50 MHz ISA/256K/CPU	599
486-33 MHz EISA/256K/CPU	565
486-33 MHz ISA/CPU	436
486SX-25 MHz 128K/CPU	285
386-40 MHz 64K/CPU-2	162
386-33 MHz 128K/CPU	155
3486-33 MHz 128K/Cyrix	265
386SX-33/25/16 CPU	105/98/78
286-20 MHz/CPU	62
286-12 MHz/CPU	55
486DX-33/66 MHz/Local Bus/No CPU	129
486DX-50 VESA/256K/CPU	736

INTERFACE CARDS

IDE Controller Card VESA/Cache	\$225
IDE Controller I/O Card (2S/1P/1G)	13/16
Floppy Controller MFM 1:1	39
Ethernet 2.88 FDC Card	65
AT I/O 2S/1P/1G Card	15
Ultrastor 12F/24K (ESDI)/24F	140/439
Adaptec-1542B (SCSI)	238
DTC 3280 SCSI Card	110
ATI VGA Wonder XL24 1 MB	135
Genoa 7900 SVGA	125
256K VGA	28
512K 1024x768	39
Oak/1MB 1024x768	49
Trident SVGA/1MB 1024x768	59
Diamond Stealth 1 MB VRAM	205
ProDesigner IIS Sierra 1 MB	129
Tseng Lab 1M 1280x1024 (ET4000)	84
Orchid Fahrenheit 1MB	165
SpeedStar Hi 24X	165
ATI ULTRA PRO 2 MB VRAM L Bus	425

MISC.

Mouse Hi-3 Button/Black	\$14/20
Microsoft Mouse	60
Logitech Bus Mouse/Mouse Man	69/60
230W Power Supply	45
Slim Case w/230W	70
Mini-AT Case w/PS	50
Mini-Tower Case w/PS	50
Full Tower Case/PS/Black	98/120
Mid Tower Case w/PS	78
Sound Blaster Pro Card	175
Sound Commander FX	95
250MB Colorado/120MB	240/190
Sony CD-ROM/Software/CD U31	384
Mitsumi CD-ROM/Software/35ms	374
Windows 3.1 & Znix Mouse	58
Windows 3.1 w/System	45
MS DOS 5.0 w/System	45
1MB 70/80ns SIMM	31
4MB 70/80ns SIMM	129
256x9 70/80ns SIMM	11
256x4 70/80ns DIPS	4
80387-40 Cyrix	95/85
80387DX-40/33/25/16/ULSI	85
387SX-25/20/16	75/70/65

MODEMS

2400 Zetrix Int/Ext	\$35/60
Fax Modem (9600/2400) R/S	60
Fax Modem (4800/2400)	35
14400/14400 Fax Modem Int/Ext V.42	210/235
9600/9600 Fax Modem Int V.42	199

PRINTERS

Panasonic KX-P1180	\$158
Panasonic KX-P1123	207
Panasonic KX-P1124i	284
Panasonic KX-P1624	364
Panasonic Laser 4410	664
HP IV/Toner	1399

HARD/FLOPPY DRIVE

1.2 MB/1.44 MB Teac	\$54/49
1.2 MB/1.44 MB Mitsumi	49/44
1.44 MB Sony	55
1.44 MB Epson	44
2.88 MB Teac	88
1.2/1.44 Teac Dual	129
1.2 MB/1.44 MB Teac Black	55/50

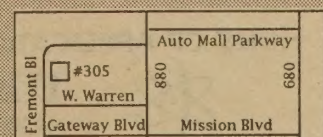
KING STAR COMPUTERS INC. 46560 FREMONT BLVD. #305 FREMONT, CA 94538

ONE YEAR WARRANTY PARTS & LABOR ON SYSTEMS

OPEN Mon-Fri: 8:30-5:30

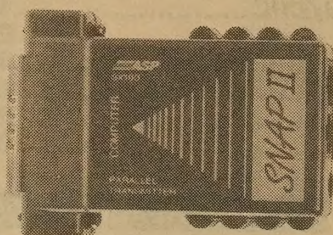
TEL: (510) 659-8590 Fax: (510) 659-8644

- Dealer Inquiries Welcome
- Prices Subject To Change W/O Notice
- Gov't PO's Welcome

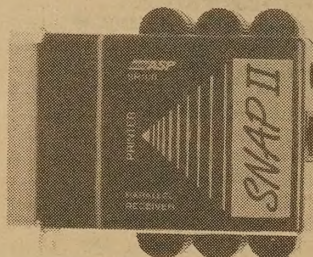


Hassle-Free Printer Sharing

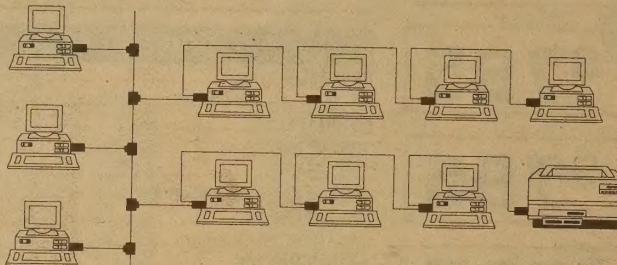
Low-cost, modular printing network for up to 20 computers



SNAP II transmitter - \$59



SNAP II receiver - \$69



Here's how your printer sharing network can grow with your office. It's called *SNAP II*. Simply plug a transmitter to the parallel port of each computer, a receiver to the printer and connect with up to 1400 feet of modular phone cable. As you add computers to your office, you simply "snap" them in anywhere along your existing *SNAP II* network. *SNAP II* lets you connect up to 20 computers to a printer or printer sharing device. 3-way couplers provided by ASP let you connect the computers in any configuration. Installation is a snap!

SNAP II requires no software and no training! What could be easier? Everyone prints as they did before. No one has to move his or her furniture. In other words, *SNAP II* is an instant network!

ASP offers a complete line of printer sharing solutions. To order your *SNAP II* or for a dealer near you call:

800-445-6190

Dept. 23108

Call for your FREE Catalog



ASP COMPUTER PRODUCTS, INC.

160 San Gabriel Drive
Sunnyvale, California 94086
Tel: 408-746-2965 • Fax: 408-746-2803

SNAP II is a trademark of ASP Computer Products, Inc.

CONTRIBUTORS

Contributing editor **Lenny Bailes** is a teacher and consultant in San Francisco.

Jennifer Robin Cherniss is a free-lance writer living in Berkeley.

Kathleen Creighton is a longtime observer of public online services and can be reached at casey@well.sf.ca.us.

John C. Dvorak is probably the industry's most ubiquitous columnist, book author, and talk show host. He's been seen hanging out in some strange basements recently.

Bennett Falk works in the tech support department at Sybase, where he and his colleagues have recently formed a band called RTFM.

Mitsu Hadeishi is the founder of Open Mind, a San Diego-based software company.

Paul Hoffman is an industry analyst who's been writing about microcomputer technology for ten years, and is the author of several books on computer-related topics.

Cynthia Johnston lives in San Francisco and does innovative things with FileMaker.

Ed Kahn is a writer and consultant based in the San Fernando Valley.

Matthew Leeds works at Brøderbund Software and writes about various Mac-related subjects.

Judy Malloy is an associate editor of *Leonardo* and *Leonardo Electronic News*. She has been creating and using artists' software since 1985.

Mike Markowitz works in computer support at a major Southern California university.

David Morgenstern is a BMUG volunteer and works in the library at San Francisco State.

Robert Moskowitz is a business consultant based in Woodland Hills. He writes frequently on productivity, office automation, and technology.

Douglas J. Nakakihara is a confirmed Amiga fan who's also a CPA at Sunkist.

Tony Reveaux is the editor of *Computer Publicity News*, a contributing editor for *Artweek*, and the author of the "MediaScan" column in *Film/Tape World*.

Kevin Savetz just graduated from Humboldt State University in Arcata, California, and would like to announce that he needs a job. His email address is savetz@rahul.net.

David Simon is an Oakland-based CPA.

Ernest Tello is a free-lance writer in the Santa Cruz area.

Jim Warren founded the West Coast Computer Faire and, more recently, chaired the First Conference on Computers, Freedom, and Privacy. He is a member of Autodesk's board of directors.

PC UPGRADES

COMPLETE PARTS AND LABOR WARRANTY

386 PC UPGRADES

- 386SX/16/20/25 TO 386DX/33\$299
- 386SX/16/20/25 TO 486DX/33\$499
- 386DX/33 TO 486DX/33\$399

286 PC UPGRADES

- TO 386SX/16/25/33\$169/199/299
- TO 386DX/33 WITH 4MB RAM AND 80MB HARD DRIVE\$599
- TO 386DX/40 WITH 4MB RAM AND 80MB HARD DRIVE\$699
- TO 486DX/33 WITH 4MB RAM AND 80MB HARD DRIVE\$799
- TO 486DX/40 WITH 8MB RAM AND 120MB HARD DRIVE\$899

PC XT UPGRADES

- TO 286 WITH 2MB RAM AND 40MB HARD DRIVE\$349

HOME OF APPLICATION SPECIFIC COMPUTER SYSTEMS



DEYS ENGINEERING

44380 S. Grimmer, Fremont (510) 770-1969

COMPLETE
HARDWARE
SALES &
REPAIRS
CALL FOR
SOFTWARE



BUILD YOUR COMPUTER WITH US

**SUN
MOON STAR
MULTIMEDIA
UPGRADE KIT
\$498**

**No More Fear! Learn About Your Computer
While We Help You Build or Upgrade It Yourself!**

IT'S EASY—In a test done by "Dvorak On Computer" anchor Leo Laporte, a 486/50 computer was built by Mr. Laporte in our center in 1 hour. Visit one of our 25 convenient California locations and see what everybody is talking about.

SPECIAL PROMOTION: Build a 486 System & get a Domino Tool set

**SPECIAL
386/33MHz/64k
\$175**

**SHAREWARE
AVAILABLE**

**BUILD YOUR COMPUTER and get a
FREE
COMPUTER
CLASS from**



Hot Product! BitFax/OCR

Turn your fax into editable text \$69

SPECIAL! True-Color Turbo SVGA Card

16 million colors, 1280x1024 resolution (1MB)

Best Buy high performance SVGA card \$85

NEW! SOUND MACHINE

SoundBlaster Clone w/ speakers & joystick \$105

DO IT YOURSELF SPECIAL

Build a 386/33 MHz/ 64k SVGA Monitor System
w/1MB, 2 Floppy Drives, 40MB Hard Disk \$798
Upgrades: 4MB memory/130MB HD \$95/100

MOTHERBOARDS

SPECIAL! 386SX 16 MHz \$79
386/40 MHz/ 64k cache \$190
486SX/25 MHz \$225
486/33 MHz/ 64k cache \$475
486DX2/50 MHz/ 128k cache \$620
486DX2/50 MHz/ 256k cache EISA \$840
486DX2/66 MHz/ 128k cache \$790
486/33 MHz/256k cache VESA local bus \$598

ACCESSORIES

Motorola PT-500 Cellular Portable Phone ... \$389
1.44MB Floppy Drive \$49
True-Color Turbo SVGA Card (1MB) \$85
Domino Mouse \$13
Super VGA Monitor (1024x768) \$249
Non-interlaced VGA Monitor \$315
SPECIAL! 9600 2400 Fax/Data Modem \$59
NEW! 14.4/14.4 Fax/Data Modem \$240
BitFax for Windows (Fax modem software) .. \$48
BitCom for Windows (Modem software) \$48
BitFax/OCR Turn fax into editable copy \$69
AWARD WINNING OKI 380 24 pin printer \$215
486/33/80MB Notebook \$2150
Mitsumi CD-ROM w/ 6 titles \$295
Sony Internal CD-ROM w/ software pkgs.... \$450
Hard Disks & Much, Much More \$CALL

Prices subject to change w/o notice. Not responsible for typographical errors.
386, 486, SX are trademarks of Intel Corp.

100% FINANCING AVAILABLE

Domino

COMPUTER SELF SERVICE CENTERS

CONCORD
1130D Burnett Ave.
Concord, CA 94520
(510) 682-8934
Cor of John Glenn & Burnett
OPEN SUNDAY

DALY CITY
7317 Mission Street
Daly City, CA 94014
(415) 994-7581
Near Eastmore & San Pedro
OPEN SUNDAY (By Appt.)

SAN FRANCISCO
3400 Geary Blvd.
San Francisco, CA 94118
(415) 668-9311
Geary & Commonwealth
OPEN SUNDAY

LOS ALTOS
111 Plaza North
Los Altos, CA 94022
(415) 941-7778
Bk of State nr. Wells Fargo
OPEN SUNDAY (By Appt.)

MILPITAS
976 Hanson Court
Milpitas, CA 95035
(408) 946-6991
Milpitas Blvd. & Jacklin
OPEN SUNDAY (By Appt.)

CAMPBELL
486 E. Campbell Ave. Ste 102
Campbell, CA 95008
(408) 374-7477
3 blocks west of Pruneard
OPEN SUNDAY

BLOSSOM HILL
461 Blossom Hill Rd., Unit H-1
San Jose, CA 95123
(408) 363-1800
Blossom Hill at Snell
OPEN SUNDAY (By Appt.)

SANTA CLARA
2536 Seaboard Ave.
San Jose, CA 95131
(408) 955-9290
Behind Office Depot on Trimble
OPEN SUNDAY

VALLEJO
480 Redwood St., Ste. 41
Vallejo, CA 94590
(707) 644-5055
Redwood exit w. Hy 80
OPEN SUNDAY

SAN RAFAEL
757 Lincoln Ave., #30
San Rafael, CA 94901
(415) 453-8525
C. San. Raf. at Hwy 101

SANTA ROSA
1740 Santa Rosa Ave.
Santa Rosa, CA 95404
(707) 523-2055
Nr Santa Rosa & Baker

SAN LUIS OBISPO
439 Marsh St.
San Luis Obispo, 93401
(805) 549-9995
Hwy 101 exit at Marsh

SAN RAMON
2217 San Ramon Vly Bd.
#C, San Ramon 94
(510) 820-6022
Inside San Ramon Sq.

SACRAMENTO
3019 Arden Way
Sacramento, CA 95825
(916) 972-0311
Inside Arden Center

MILLBRAE
231 Millbrae Ave., # 101
Millbrae, CA 94030
(415) 259-8080
Right nrt to Shell Station

BERKELEY
1552 Beach St., Ste. B
Emeryville, CA 94608
(510) 653-6286
Cor of Park & Halleck

HAYWARD
26222 Industrial Blvd.
Hayward, CA 94545
(510) 732-0377
Industrial and Hwy. 92

SUNNYVALE
1214 Apollo Wy, #404-2
Sunnyvale, CA 94086
(408) 749-8114
Lawrence nr Wells Fargo

QUALITY, VALUE, & EXPERTISE ARE WHAT YOU GET AT ETI!!! LOCAL BUS SYSTEMS

FILE SERVER

486 EISA DX2-66, 256KB cache	\$2575
486 EISA DX-33, 256KB cache	\$2305

Made in USA system board with CPU
8MB DRAM(expandable to 128MB)
340MB IDE (15MS)
32 Bit EISA IDE controller
16 Bit Ethernet adapter
1.2MB & 1.44MB FDD
2 serial & 1 printer port
101 enhanced keyboard
Tower case and 300W power supply

OPTIONS:

32 Bit EISA Ethernet	+\$100
540MB IDE (12MS) drive	+\$300
EISA SCSI controller	+\$230
SCSI 340MB (15MS) drive	+\$30
SCSI 663MB (15MS) drive	+\$490
File server case	+\$250

EISA WIN STATION

486 EISA DX2-66, 64KB cache	\$2620
486 EISA DX2-50, 64KB cache	\$1950
486 EISA DX-33, 64KB cache	\$1805

Made In USA system board with CPU
4MB DRAM (expandable to 128MB)
1.2MB & 1.44MB FDD
32 Bit EISA IDE controller
120MB IDE drive
101 enhanced keyboard
2 serial and 1 printer port
1 Serial mouse

Baby AT desk top case, 200W power supply
14" SVGA monitor .39 and VGA card (1MB)

OPTIONS:

340MB IDE drive	+\$430
200MB IDE drive	+\$100
Diamond Stealth VRAM	+\$165
32 Bit Local Bus VGA (1MB)	+\$90
SVGA .28	+\$45
Full tower case 300W PS	+\$90

ISA 486 SYSTEM

486 DX-33/50 128KB \$1320/1540	386 SX-33/25 \$620/610
486 DX2-50/66 128KB \$1400/1610	

System board with CPU
4MB DRAM
120MB IDE drive
1.2 & 1.44MB FDD
16Bit IDE controller
2 serial & 1 print port
14" SVGA monitor .39
1MB VGA adapter
Mini tower or baby AT case

OPTIONS:

256KB cache	+\$30	2nd FDD	+\$53
RAM per MB	+\$30	40MB IDE drive	+\$175
		80MB IDE drive	+\$220

ISA 386SX

System board with CPU
2MB DRAM
1.2 or 1.44 FDD
IDE controller
2 serial & 1 print port
10 enhanced keyboard
Mini tower or baby AT case
14" SVGA .39
1MB VGA adapter

OPTIONS:

2nd FDD	+\$53
40MB IDE drive	+\$175
80MB IDE drive	+\$220

LAN PRODUCTS SPECIAL

Ethernet 16Bit combo : \$90
Ethernet 8Bit combo : \$80
Ethernet 32 Bit EISA : \$200
(10BASE2 & 10BASE5)
8 port 10BASE-T HUB: \$245
Pocket Ethernet : \$180
(10BASE-T & 10BASE2)
Transceiver 10BASE-T: \$70
Transceiver 10BASE2 : \$75
Ethernet 16 Bit: \$80
(10 BASE2 & AUT)

ETI

SYSTEMS DIV.

43146 CHRISTY STREET, FREMONT, CA 94538

FAX (510) 651-4834

(510) 651-5817

IBM, COMPAQ, TOSHIBA, HP, NEC & APPLE BEST PRICES !!

NOTEBOOKS

SATELLITE T1800, 6.8/2/60	\$1275
SATELLITE T1850, 6.8/4/80	\$1599
SATELLITE T1850C, 4/120	\$3399
IBM THINK PAD 300/700C	\$CALL
MIDERN 486 SLC-25/4/120 COLOR	\$2499

HARD DRIVES

CONNER CP3544, 543MB	\$899
CONNER CP3024, 212MB	\$378
CONNER CP30104, 120MB	\$249
MAXTOR LXT 340, 307MB	\$585
SEAGATE 16MS, 130MB	\$265

PRINTERS & etc.

HEWLETT PACKARD LaserJet 4	\$1399
CANNON BJ 10EX	\$285
INTEL SAATISFACTION Modem/400 96/144	\$392
COLORADO DJ10 (120MB) TAPE B/U	\$185
COLORADO DJ20 (250MB) TAPE B/U	\$252

FCC CLASS 'B' APPROVED SYSTEMS, WITH
OPTIONAL NATIONWIDE ON-SITE SERVICE

486 DX/2-50-4-213-2F- .39SVGA	\$1575
486 DX-33-4-213-2F- .39SVGA	\$1475
486 SX-25-4-213-2F- .39SVGA	\$1325
386 DX-40-4-213-2F- .39SVGA	\$1275

CALL FOR LOCAL BUS, EISA BUS, & OTHERS

NOVELL

NETWORKING

- Local & Wide Area Networking
- Experienced CNE
- Supports Arcnet, Ethernet, Token Ring
- Please call 415-974-3655 for Quote.

SIMMS: 1MBx70ns IBM/MAC..... \$29.95
EXPORTERS PLEASE CALL.

A and M Technologies



Phone : (415)-974-3644
Fax : (415)-974-1318
717 MARKET STREET #602
SAN FRANCISCO CA 94103

Bay Area's Computer Magazine MICROTIMES

EDITOR-IN-CHIEF

Dennis Erokan

PUBLISHER

Chuck Stanley

EDITORIAL 510-934-3700

EDITOR Mary Eisenhart

ASSISTANT EDITOR Michael Robin

NEWS EDITOR Paul Hoffman

ART DIRECTOR Lisa Lusk

SENIOR DESIGNER Monika Lukenbill Loar

CONTRIBUTING EDITORS Lenny Bailes, John Perry Barlow, John C. Dvorak, Bennett Falk, Mitsu Hadeishi, Ed Kahn, Matthew Leeds, Mike Markowitz, Brock Meeks, David Morgenstern, Douglas J. Nakakihara, Tony Reveaux, Birrell Walsh, Jim Warren, Wayne A. Yacco

CONTRIBUTING WRITERS Mikael Blaisdell,

Anna Couey, Kathleen Creighton, Adam Gaffin,

Rich Grace, Peter John Harrison, Fred Lieberman,

Woody Liswood, Robert Moskowitz

CONTRIBUTING PHOTOGRAPHERS Jay Blakesberg, Michael

Jay, Susana Millman, Ann Summa, Paul Winternitz

ADVERTISING 510-934-3700

DIVISION BUSINESS MANAGER Amy Barrett

SALES MANAGER Cynthia Lapporte

(Southern California)

SENIOR ACCOUNT DIRECTOR Barry Green

(Northern California)

NATIONAL ACCOUNT DIRECTORS Jane Shepherd (Southern

California), Greg Sage (Northern California)

ACCOUNT EXECUTIVES Marty Gillow, Tracy Longo,

Ken Marson, Chloe Vezo, Debra Siegel

CLASSIFIED & SUBSCRIPTION MANAGER

Jennifer Kosta (Northern California)

ADVERTISING SERVICES ASSISTANTS

Carolyn Guerrero (Northern California)

Brooke Jonassen (Southern California)

PRODUCTION

GROUP PRODUCTION DIRECTOR Richard Lesovoy

GROUP PRODUCTION MANAGER Mary Beth DeSantis

PRODUCTION ASSISTANT Wendy Sloneker

TRAFFIC ASSISTANT Matt Matuska

ART STAFF Jennifer Bagwell, Donna Bogener,

Rick Colby, Hilary Dunn, Gigi Green, Robyn Hartt,

Stephen Noetzel, Diane Wallace

CAMERA OPERATOR John Moorehead

PROOFREADER John Downen

TYPESETTING The Typesetting Shop, Inc.

ADMINISTRATION

CONTROLLER Patricia Buck

SENIOR ACCOUNTANT Linda May

ACCOUNTING Joaquin Arellano, Kim Carrington,

Vickie Liu, Brian Murray, Bonnie Peterson

CREDIT MANAGER Doug Morgan

HUMAN RESOURCES DIRECTOR Erica Stein-Oakley

L. A. OFFICE MANAGER Deborah Daiken

ADMINISTRATIVE ASSISTANTS Christine Garcia,

Monica Murdock

L. A. ADMINISTRATIVE ASSISTANT Jane Sullivan

OFFICE CLERK Leta Jesch

DISTRIBUTION 510-934-3700

DISTRIBUTION MANAGER John Erokan

Assistant Manager/LA Art Holland

DISTRIBUTION ASSISTANT Tami Martin

DISTRIBUTION CLERK Virgil Cecilio

FIELD COORDINATOR Roe Eyth, Frank Grygus

DISTRIBUTION Dennis Anderson, John Clefstad,

Roe Eyth, Frank Grygus, Don Karr, Juan Lau,

Jac Michanovic, Robbie Myers, Kelly Orr, Joseph Rafalo,

Reliable Circulation, John Dimas Rezendes,

SPS, Wilfredo Villarroel

FOUNDERS Dennis Erokan, Don Hamilton, Pat Hamilton

BAM PUBLICATIONS, INC.

Dennis Erokan, President

Arthur L. Magnus, Chief Financial Officer

This Vol. 10 No. 2 February 8, 1993, Whole No. 105 MicroTimes, California's Computer Magazine, is published by BAM Publications, Inc., 3470 Buskirk Ave., Pleasant Hill, CA 94523. Phone Advertising Office (510) 934-3700. Los Angeles Office, 6767 Forest Lawn Drive, Suite 110, Los Angeles, CA 90068. Phone (213) 851-8600. San Jose Office, 36 Harold Ave., Suite 2, San Jose, CA 95117. Phone (408) 244-4400. Anaheim Office, 801 East Katella Ave., Suite #210, Anaheim, CA 92805. Phone (714) 939-2809. MicroTimes™ is ©1993 by BAM Publications, Inc. Subscription rates: 13 issues, U.S.: 3rd Class \$32 (Allow 3 to 4 weeks for delivery), 1st Class \$60 Allow 1 to 2 weeks for delivery). MEXICO & CANADA: Surface Mail \$50 (Allow 4 weeks for delivery). Air Mail \$70 (Allow 1 week for delivery). OVERSEAS: Surface Mail \$50 (Allow 6-10 weeks for delivery), Air Mail \$165 (Allow 1 week for delivery). To receive sample issues, please send \$4 (\$6 for overseas) to cover postage costs. Back issues are \$6 each. All rights reserved. Reproduction in whole or in part without permission of Publisher is strictly prohibited. The staff and management of MicroTimes do not advocate or encourage the use of any product or service advertised herein for illegal purposes.

IN 486'S & NOTEBOOKS

THERE IS A NEW LEADER
OFFERING PC BUYERS
WITH VALUE,
SERVICE,
& QUALITY.

1-2-3 WARRANTY

WARRANTY: 1-YEAR ON PARTS, 2-YEAR
ON MAINBOARD, 3-YEAR ON LABOR.

30-DAY MONEYBACK

WE GUARANTEE YOUR RISK-FREE PURCHASE
BY OUR 30-DAY MONEYBACK POLICY.

LIFETIME TOLL-FREE

OUR CUSTOMERS HAVE UNLIMITED ACCESS
TO OUR TOLL-FREE TECHNICAL SUPPORT.

EDUCATIONAL DISC.

DISCOUNT PROGRAMS ARE AVAILABLE FOR
QUALIFIED INSTITUTIONS

PO'S ACCEPTED

PO'S FROM QUALIFIED CORPORATIONS ARE
WELCOME, FAST CREDIT APPROVAL.

NETWORK READY

SANTRON'S SYSTEMS ARE READY FOR YOUR
JUST-PLUG-IN NETWORK OPERATION



SANTRON

1-800-938-7888

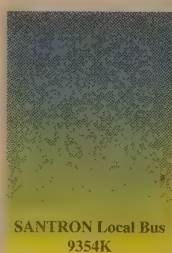
SANTRON

VESA

Breakthrough of
Today's 486 PC's
Technology

Today, we are turning our competitors on their ears
- Santron's new 32-Bit Local Bus with VESA (Video
Electronics Standards Association) Architecture-
today's solution for compatibility.

With Windows,
our 32-Bit VESA
local bus card
provides up to
1280x1024
resolution and
32,768 colors.



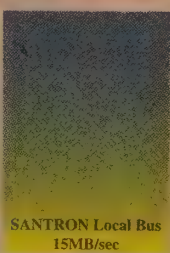
VIDEO



Overall Windows Performance Test WinMarks

At an affordable price, you get the power and speed which exceeds EISA standards. Your graphics are processed at a speed up to 50 times faster than the standard SVGA. How is this possible? Most of the computers only have added graphics accelerators, however, their real-time speeds are still limited by their 8MHz 16-Bit AT bus. Santron's Local Bus processes video bypassing the bus bottleneck. This enables the 32-Bit graphics accelerator to connect directly to the 486 CPU - a real 32-Bit performance. What's more, Santron's Local Bus Systems have slots for a 32-Bit Local Bus hard disk controller for

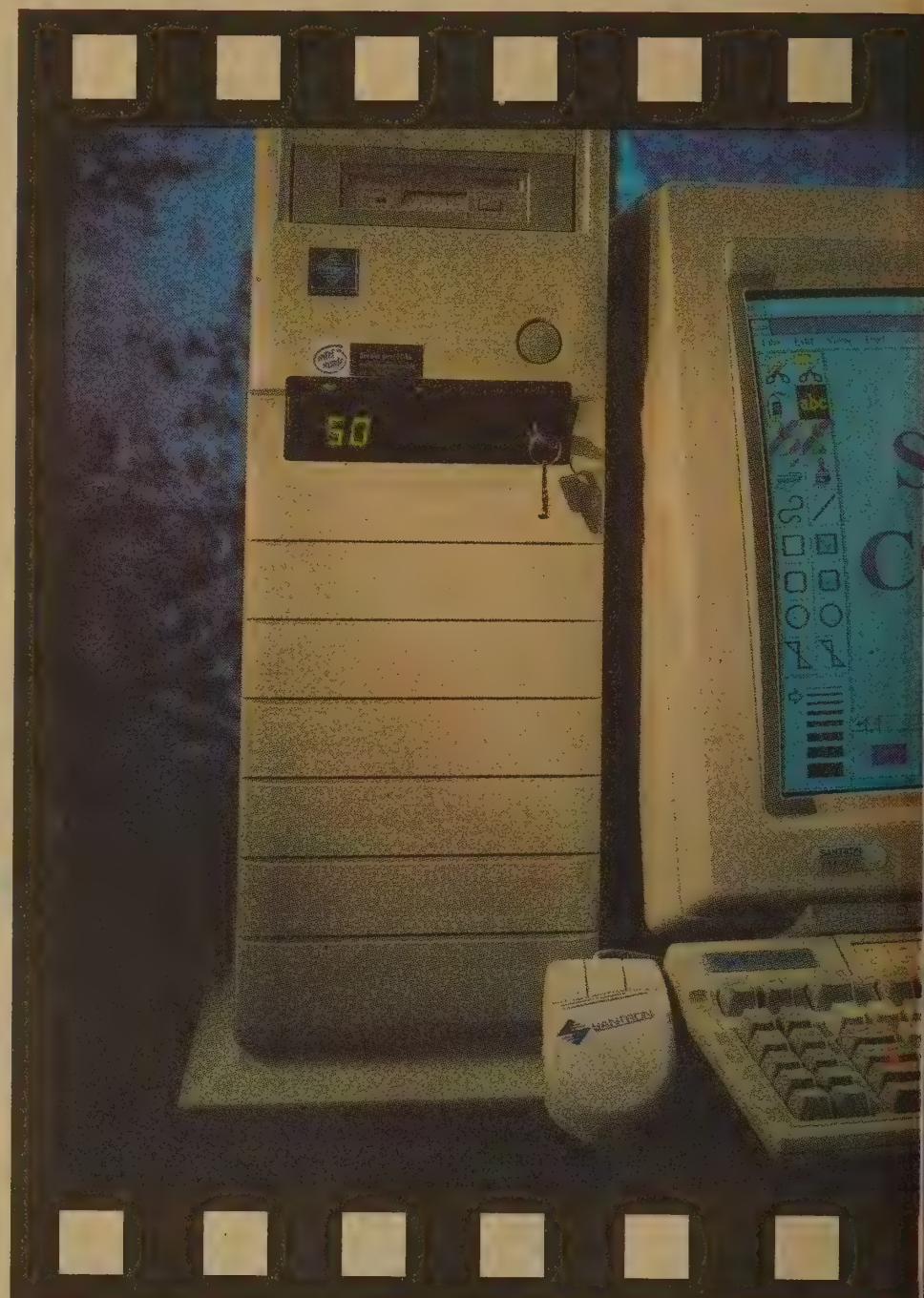
Our 32-Bit local
bus controller
out-perform all
other controllers
and increase
data transferring
up to 20 times.



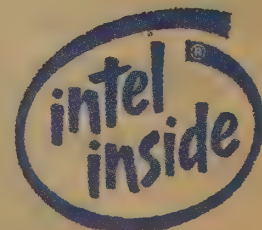
Hard Disk



Overall Windows Performance Test Core-Test



lightening fast data transfer rates of up to 100%
faster - for a total 32-Bit video / hard disk solution.
The built-in SPEED MASTER
CONTROLLER will remove
redundent workload off the
CPU allowing your system to
work more efficiently. What
an unsurpassed performance!



* The Intel Inside Logo is a registered trademark of Intel Corporation.

LOCAL BUS



SANTRON LOCAL BUS

Enjoy your graphics at a speed up to 50 times faster than ever

- Intel486® Microprocessor with Built-in Math-CoProcessor
- AMI BIOS with System Setup and Hard Disk Utilities
- Full Tower with Digital Display & 250W Power Supply
- 256K 20ns Cache Memory & 4MB 70ns RAM
- IDE Controller Card with 2 Serial/1 Parallel/1 Game Ports
- TEAC 1.2MB and TEAC 1.44MB Floppy Drives
- 120MB 15MS Hard Drive with 64K Cache Memory
- 32-Bit ET-4000 1280 SVGA Card (1MB; 32,768 Colors)
- Super VGA Monitor (0.28mm, 1024x768 Non-Interlaced)
- Focus-9000 129-Key Programmable Keyboard
- Free Hi-Resolution 3-Button Mouse
- Free Microsoft DOS 5.0 and Microsoft Windows 3.1

486DX-33 LOCAL BUS.....**\$1725**

486DX-50 LOCAL BUS.....**\$1945**

486DX2-50 LOCAL BUS...**\$1795**

486DX2-66 LOCAL BUS...**\$2095**

UPGRADES & OPTIONS

DISPLAY UPGRADE

32Bit S3 Local Bus Video Card..**\$145**

14" 1024NI to 15" 1280NI.....**\$145**

STORAGE UPGRADE

From 130MB to 210MB.....**\$150**

From 210MB to 340MB.....**\$395**

32Bit Local Bus SCSI/IDE.....**\$245**

COMMUNICATION/MEDIA

Int. 9600Fax/2400Modem.....**\$85**

Multi-Media Kit.....**\$525**

OTHER UPGRADES

Virus Immunized Card.....**\$95**

Memory Upgrade.....**\$45/MB**

Install 2nd Power Cooling Fan....**\$25**



OF COURSE, SANTRON!

SANTRON

SAN MATEO

1185 Chess Dr., Foster City, CA
Hours: Mon.-Fri. 8:00-6:00 p.m.
Fax: (415) 571-6079

1-800-938-7888

SANTA CLARA/SAN JOSE

3472 El Camino Real, Santa Clara, CA
Hours: Mon.-Fri. 9:00-6:00 p.m.
Fax: (408) 261-0639

1-800-675-5465

SAN FRANCISCO

3210-3212 Geary Blvd, San Francisco, CA
Hours: Mon.-Sat. 9:00-6:00 p.m.
Fax: (415) 750-0649

1-800-748-6269

SANTRON 486 PC's **SANTRON 486's**

- Intel486® Microprocessor
- Built-in Math-CoProcessor (DX & DX2)
- AMI BIOS with Setup & Hard Disk Utilities
- Tower Case with Digital Display
- 4MB 70ns RAM & 64K Cache Memory
- TEAC 1.2MB & 1.44MB Floppy Drives
- 120MB 15MS Hard Disk with 64K Cache
- 2H/2F IDE Controller
- 2 Serial/1 Parallel/1 Game Ports
- Super VGA Card With 1MB RAM
- 14" Non-Interlaced Super VGA Monitor (HITACHI Tube, 0.28mm, 1024x768)
- 101-Key Enhanced Style Keyboard
- **Free** Hi-Res. 3-Button Mouse
- **Free** Microsoft DOS 5.0
- **Free** Microsoft Windows 3.1

UPGRADES & OPTIONS

DISPLAY CARDS/MONITORS

- Diamond Speedstar 24X**\$125**
 Orchid Fahrenheit/Diamond Stealth...**\$185**
 ATI Graphic Ultra 1MB VRAM.....**\$245**
 From 14" Monitor to 15" 1280NI.....**\$145**

Ask for **ViewSonic, SONY, MAG, NEC** and many more...

KEYBOARDS

- From 101 to 129 Programable.....**\$55**

STORAGE DEVICES

- From 120MB to 210MB**\$150**
 From 210MB to 340MB**\$395**
 COLORADO 120MB Tape Backup**\$225**
 COLORADO 250MB Tape Backup**\$285**

Santron Multi-Media "Super Fun"

\$525



486DX-33.....JUST \$1545

486DX2-66.....\$1975

486DX-50.....\$1725

486SX-25.....\$1325

Multi-Media

Multi-Media turns your Santron Computer into a multi-dimensional audio-visual device. You can enjoy powerful presentations for entertainment and education with sight and sound effects.

✓ PANASONIC CR-521A 660MB CD ROM Multi-Media & Windows Certified

- ✓ Sound Blaster Pro Audio Card
- ✓ Multimedia Extension 1.0
- ✓ Microsoft Reference Library
- ✓ Entertainment and Education Software Available
- ✓ Sherlock Holmes
- ✓ Microsoft Bookshelf for Windows
- ✓ Prosonus and Creative Sounds

Add full multi-media capability to your Santron PC! For only \$525, we'll install our multi-media package including listed software titles for your SUPER FUN.



WHY SACRIFICE QUALITY FOR PRICE?

All Santron systems must pass our 72-hour RARITON dynamic test - today's most advanced and rigid quality control procedure.

*With our 1-year on-site service, 1-2-3 warranty, and 30-day return policy, your purchase can never go wrong.**

The best value prevails.

Santron - a smart choice.

ORDERING INFORMATION:

Shipping and handling are additional. C.O.D. add \$10 handling charge. Call for special UPS Red/Blue terms. Insurance for APO's and FPO's is additional. Products labeled FREE on advertising are not covered by warranty. * Notebooks are covered by 1-year warranty. Notebooks, monitors, printers, and other peripherals are not covered by on-site service. All returns require RMA# issued by Santron's Customer Service Department (415-571-5193) and must be shipped in the original condition prepaid and insured. Incomplete, or unauthorized returns are non-refundable or subject to restocking charge. Returns of products not listed in standard configured systems are subject to a 20% restocking charge. Refunds will be issued within 14 days less deductions on freight, and charges related to the payment. All prices and specifications are subject to change without notice.

SANTRON *Ultimate* NOTEBOOK

- Intel 486® Microprocessor
- Weight 6.6lbs; Dimensions 11" x 8.5" x 2.3"
- 32K Cache Memory
- 4MB RAM Upgradeable to 8 or 32MB
- 80MB 15ms Hard Drive
- 1.44 MB Int. Floppy Drive
- Built-in Trackball
- Built-in Fax/Modem (optional)
- 3.5 Hour Battery
- 10" 64 Grayscale LCD Screen
- Serial, Parallel, VGA, Scanner Ports
- **Free** Microsoft DOS 5.0
- **Free** Microsoft Windows 3.1

UPGRADE OPTIONS

4MB to 8MB	\$225
80MB HD to 120MB HD	\$175
120MB HD to 210MB HD	\$295
Internal Fax / Modem	\$125
Ethernet Coaxial Adapter ...	\$175
Docking Station	\$295

486SX-25... \$2195

486DX-33... \$2395

EVEN LOWER



* The Intel Inside Logo is a registered trademark of Intel Corporation.

SAN MATEO

1185 Chess Dr., Foster City, CA
Hours: Mon.-Fri. 8:00-6:00 p.m.

Fax: (415) 571-6079

1-800-938-7888

SANTA CLARA/SAN JOSE

3472 El Camino Real, Santa Clara, CA
Hours: Mon.-Fri. 9:00-6:00 p.m.

Fax: (408) 970-0359

1-800-675-5465

SAN FRANCISCO

3210-3212 Geary Blvd., San Francisco, CA
Hours: Mon.-Sat. 9:00-6:00 p.m.

Fax: (415) 681-2535

1-800-748-6269

Letters

RETURN TO THE SOAPBOX: PERSPECTIVES ON VENTURA

In the 1992 Writers' Soapbox Awards (Issue #103), contributing writer Rich Grace announced Ventura Publisher 4.1 for Windows as his choice for Worst Software Release of the Year, with the following comment:

"I really regret having to say this, but Ventura's new dressed-up desktop publishing release is a disaster. Equipped with a snazzy new button bar and greater flexibility in finding and using features, the new Windows-friendly interface omits basic features like stable operation (it barfs every time I run it on an 8MB 486-33) and reasonable start-up time (requiring over two minutes). I hope Ventura releases a maintenance fix fast. Right now, this program is a real mess."

Not entirely to our surprise, we received a horrified phone call from Ventura, closely followed by a letter from Ventura vice president Bryan Standley. Mr. Standley's letter, and Rich Grace's response, speak for themselves, and we present them here in the interests of providing our readers with more complete information. We also have features on Windows-based desktop publishing packages, which will obviously include coverage of Ventura, scheduled for Issue #107.

In the meantime, though, we also feel the need to reassert both our commitment to fairness and the nature of the Writers' Soapbox Awards, which are overtly presented as a forum in which our writers are subjective and opinionated. It is reasonable to expect off-the-cuff remarks and various forms of exaggeration, both positive and negative, in that context. It is also a time-honored quality of the Soapbox Awards that writers regularly contradict each other—for example, in the 1991 awards, roughly equal numbers of our contributors awarded "Year's Best" and "Year's Worst" honors to Apple's System 7. The Soapbox Awards are, in a sense, the print counterpart to what you might read online, or what you might hear at your user group.

None of which is to be confused with our formal product reviews, which, though also inextricable from personal opinion and experience, are presented with far greater depth and seriousness.

We think our readers are a fairly bright bunch and capable of understanding the importance of context to a statement. Despite Dvorak's frequent tales of alien programmers, crypto-Nazis, and demonic possession at Microsoft, we have no evidence that our readers make purchase decisions based on such silliness. We will continue to run the annual Awards in all their unabashed and idiosyncratic candor, in the belief that our readers are intelligent and context-sensitive enough to apply the proper filters.

—Mary Eisenhart

We were shocked by *MicroTimes'* "Soapbox Award" by Rich Grace for Ventura Publisher 4.1 [Issue #103]. At the very best, it conflicts with the vast majority of unsolicited opinions by new and existing customers alike, but moreover, it flagrantly abandons the tenets of responsible product journalism and renders unjustified, inflammatory, and damaging statements on the product which are untrue.

First, any software reviewer stating a product opinion is normally understood to be reflecting what they think of the product's quality and usefulness within the scope of its intended purpose under normal operating conditions. It's apparent from Rich's statements and from our follow-up calls to him afterward that he hardly used the product at all.

Second, a proper installation is vital toward any software's successful use and operation. In our calls with Rich we learned that he failed to read the important information listed in both the README file and the installation documentation during installation. We also show no record of his having called our technical support group (whose number is also prominently listed) for assistance.

All software's reliability is dependent on the system environment in which it runs. There are many types of systems and we have tested our software on a wide range of them. Because even similarly named or "identical processor" systems are not in reality all equal, some require specific accommodation. It's part of the nature of PC usage. For those systems we supply additional information (such as above) with Ventura Publisher and

we provide free 90-day unlimited technical support as a further assurance to all users.

The vast majority of any initial glitches are eliminated by simply following the materials shipped with the product or by making a phone call to us. This is standard operating procedure for our customers, and certainly ought to be utilized by anyone really wanting to use the product.

It goes without saying that published opinions about a product are expected to be based upon reasonable amounts of time and effort put into using the product. Readers come to depend on such opinions to assist them in assessing the viability of the product in the context of their own needs. A "soapbox" format does not change that.

Regarding the opinion about the product not having a "reasonable start-up time," the solution to that is also available in the README file, the installation documentation, and via the free technical support.

To recap all this, had Rich simply followed the instructions supplied, or even bothered to call our support line, he could have been up and running quickly and actually could have reviewed the product. Making sweeping generalizations about a product's viability that has been improperly installed not only does a disservice to your readers, but also does unjustified and unwarranted damage to the reputation of our company and sales of the product.

I would like to ask that you not only publish a retraction of this unjustifiably condemning article, but also to give the product a fair, reasonable evaluation in an upcoming issue as soon as possible. Anything less would be unfair to your readers who use your magazine's information to make buying decisions, and unfair to those of us who have made a great deal of effort in providing a program which is a successful, productive, and reliable tool for desktop publishing *when properly used.*

Bryan Standley
Vice President, Product Management
Ventura Software
San Diego

Rich Grace responds:
To begin with, I certainly understand Mr.

**BETA NINETIES AND C&J COMPUTER BRING
YOU THE BEST IN COMPUTING EXCELLENCE!
COME VISIT OUR SHOWROOM ON THE PENINSULA AND IN THE SOUTH BAY**

Super Multimedia System

**486 SX-25MHz Intel 486®
SX-25 CPU w/8K Cache**

- 4MB Memory (70ns)
 - Creative Labs Sound Blaster Pro
 - Internal CD ROM Drive
 - 1.2MB & 1.44MB Floppy Drives
 - Western Digital 170MB (12ms) IDE HD
 - 2 Serial, 1 Parallel, 1 Game ports
 - Diamond SS24X 24 Bit SVGA Card w/1M (Supports up to 16 Million Colors)
 - 14" Impression Plus SVGA Monitor (1024x768) .28 Dot Non-Interlaced
 - 101 Enhanced Keyboard
 - Deluxe Case with 230W Power Supply
 - 2 Educational CD software
 - MS DOS 5.0 w/Manual
 - 400 DPI Serial Mouse
- \$1888**

\$1888

486DX-33MHz System

Intel486® DX-33MHz CPU w/8K Cache

- 128K Ultra Fast External Cache
 - 4MB Memory (70ns)
 - 1.2MB & 1.44MB Floppy Drives
 - Western Digital 170MB (14ms) IDE HD
 - 2 Serial, 1 Parallel, 1 Game ports
 - Super VGA Card w/1M
 - 14" Super VGA Monitor (1024x768) .28 Dot
 - 101 Enhanced Keyboard
 - Deluxe Case with 230W Power Supply
- \$14**

\$ 1438

386DX-40MHz System

386DX-40MHz CPU

- 128K Ultra Fast External Cache
 - 4MB Memory (70ns)
 - 1.2MB & 1.44MB Floppy Drives
 - Western Digital 125MB (14ms) IDE HD
 - 2 Serial, 1 Parallel, 1 Game ports
 - Super VGA Card w/1M
 - 14" Super VGA Monitor (1024x768) .28 Dot
 - 101 Enhanced Keyboard
 - Deluxe Case with 230W Power Supply
- \$1098**

\$1098

THE LEADER IN CUSTOMER SERVICE

WE'LL MAKE SURE YOU LEAVE FEELING SATISFIED BECAUSE
YOUR SATISFACTION IS OUR BIGGEST GUARANTEE.



Genoa 486DX-50MHz Local Bus System

Intel486®-50MHz CPU w/8K Cache

- 256K Ultra Fast External Cache
- 4MB Memory (70ns)
- 1.2MB & 1.44MB Floppy Drives
- Western Digital 170MB (12ms) IDE HD
- 2 Serial, 1 Parallel, 1 Game ports
- Genoa 32-Bit Local Bus SVGA Card w/1M/16 Million Color
- 14" SVGA Monitor (1024x768) .28 Dot Non-Interlaced
- 101 Enhanced Keyboard
- Deluxe Case with 230W Power Supply

\$1899
486DX2-66MHz ...\$1998

486DX2-66MHz ...\$1998

WE OFFER COMPLETE INSTALLATION, UPGRADES AND A LOT MORE!

Extras

Memory Upgrade.....	\$32/Per MB
MS DOS 5.0 w/System (manual included).....	\$39
MS Windows w/System (manual included).....	\$39
Serial Mouse w/pad	\$15

Terms & Conditions

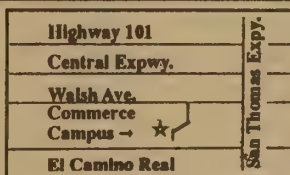
- System upgrade available
 - Prices subject to change w/o notice
 - 20% re-stocking fee on non-defective returns
 - All trademarks belong to their respective companies
 - We are not responsible for typographical errors
- DEALER INQUIRIES WELCOME

C&J COMPUTER

2370-A Walsh Ave., Bldg. C
Santa Clara, CA 95051

408/727-0788

Fax 408/727-1209



BETA NINETIES COMPUTER, INC.

133 Southwood Center
South San Francisco, CA 94080

415/875-6682

Fax 415/875-6683

BETA NINETIES COMPUTER, INC.

1655 South Main Street
Milpitas, CA 95035

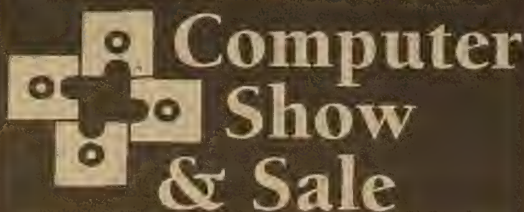
408/956-8800

Fax 408/956-1236

(Main St. & Montague Expressway)



Monday-Friday 9:30-6:00 • Saturday 10-5



LOWEST PRICES IN THE USA!

PC Compatibles • Hardware
• Software • Accessories

UPCOMING SHOWS



OAKLAND COLISEUM

February 20, 1993 • I-880 &
Hegenberger, Oakland



COW PALACE

February 27, 1993 • Corner of
Geneva & Santos, SF



ALAMEDA COUNTY FAIRGROUNDS

February 28, 1993 • 4501
Pleasanton Ave., Pleasanton



SANTA CLARA COUNTY FAIRGROUNDS

March 6, 1993 • 344 Tully
Rd., San Jose



OAKLAND COLISEUM

March 13, 1993 • I-880 &
Hegenberger, Oakland



SAN MATEO EXPO CENTER

March 20, 1993 • 2495
South Delaware, San Mateo



SANTA CLARA COUNTY FAIRGROUNDS

March 27, 1993 • 344 Tully
Rd., San Jose

All Shows from
10a.m. to 4p.m.

Admission: \$6⁰⁰
Children under 12 FREE

FOR INFO. CALL
1-800-685-1400

BBS: 415-340-9370

\$1⁰⁰ OFF

Good For All
Of The Above Shows.

Limit 1 discount coupon per person.

Regular Admission \$6⁰⁰

Copies accepted.

No other discounts apply.

Standley's position regarding my views of Ventura 4.1, and his desire to defend his product. I'll even state that such a brief assessment can be seen as a baseless and superficial attack, and I recognize that. I'll even say that I have made a couple of mistakes.

I strongly feel, however, that my experience with Ventura's current release is deep enough and comprehensive enough that most of my initial arguments are valid. When a corporate executive questions my competence and integrity as a writer I am compelled to respond in a civil but substantive way.

First of all, I am an experienced desktop publisher in the Macintosh and PC environments: I have also written reviews praising previous versions of Ventura Publisher (for an example, please see the June/July '92 issue of PC Home Journal). Mr. Standley is making claims about my discussions with Ventura tech support which are patently untrue. I made several attempts (not as a writer but as a typical end-user) to contact Ventura tech support for further information, but in all cases was unable to get through. In such a situation it's certain any calls will not be logged. [Editor's note: A reviewer usually has the vendor's public relations people as a primary contact, which often leads to fast access to tech support. For this reason among others, reviewers frequently call tech support as end-users would, as part of their coverage of the product.]

Second, I spent over twenty hours with the program, testing the button bar functions, templates, file creation and document building, text and graphics importation, and basic menu operations. After reinstalling the program, according to the documentation's specs and the information kindly provided by Ventura's competent and skilled tech support people, I continued to run into problems (though admittedly not as frequently).

Third, even after renaming the DOS SHARE.EXE file, changing the width table files, and making all the adjustments suggested, a question comes to mind: Why does a major application require you to jump through hoops just to get it up and running properly? No other program I've ever seen has required me to rename DOS programs that weren't even running in my system! Or, to rename an ENVIRON.WID font width table file, and then laboriously assign that new width table to every style sheet I need to use! It's doable by any competent user, but is still a lot of work. (Please note that startup time was dramatically improved after this process was performed. I am certainly willing to admit where I am wrong!)

Furthermore, while the button bar is a very nice feature, the underlying structure of VP is still the same. It doesn't change the fact that Ventura still doesn't support irregular text wraps (this according to their own tech sup-

port!), or that the new "Windows-friendly" version doesn't allow you to place Ventura files as icons in a group, thus enabling you to start the application with that file with a mouse click. VP, unlike most major Windows apps, doesn't support that.

Ventura has been a successful, powerful package for many years. It deserves to stay that way. I'll continue to root for it, and use it. Without a major redesign of its increasingly aging code, however, I'm afraid the competition will catch up. (Tech support also mentioned that VP 4.1's code is still based largely on that from the older DOS versions.)

I also wish to say that I regret this whole incident, and agree that even one mistake, such as the ones I've alluded to, is totally unacceptable. But I do not retract the substance of my statements.

Rich Grace

TELECOMMUTING: THE DARK SIDE

Regarding the article "Working From Home" [first in our series on telecommuting in Business Solutions], I for one do not look at home telecommuting as such a panacea. I foresee the danger of it becoming the cause of a much more stressful lifestyle because of the following:

1. It is not realistic to believe that you would be paid for your results rather than your work time. You will be monitored by your employer for time spent in front of the old CRT. As you won't spend two hours a day driving to and from work, your employer will expect that time of you. There go two more hours out of your life that the "company" now owns.

2. You will not be able to escape work by going home. In fact, much of your competition will work from breakfast to bedtime to be more competitive than you. Those with families will suffer an economic hardship because their single competitors will outwork them.

3. The perfection of virtual reality will eventually turn much of the telecommuters into zombie work-oids. They will utilize the VR to aid in sleeping and then "plug in" to work the rest of the day. Their work will eventually not even require physical movement—thoughts will be used in a kind of worldwide human brain interconnected network.

As you can see, the extensions of this technology can evolve into "extreme badness" if you don't put some checks and balances in. Just remember we used to be a single income family society, and the quality of life was better. Think how bad it will be if we can never escape the workplace. Next they'll try and take away weekends!

Barry Klein
Trabuco Canyon

QUALITY DISK DRIVES LOWEST PRICES

BRAND NEW DRIVES

NEW SCSI HARD DRIVES

	Qty 1	Qty 10
Seagate ST1239N, 3.5", 207MB, 15 ms	\$469	\$395
Seagate ST41200N, FH, 1040MB, 15 ms	\$1395	\$1295
Seagate ST41650N, FH, 1415MB, 15 ms	\$1695	\$1495
Micropolis 1578, FH, 338MB, 18 ms	\$495	\$395

NEW ESDI HARD DRIVES

	Qty 1	Qty 10
Toshiba MK358FA, FH, 660MB, 16 ms	\$995	\$695

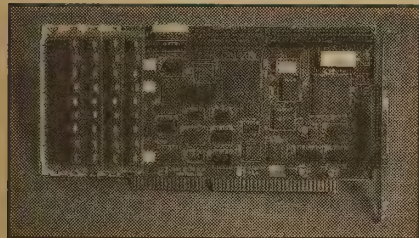
NEW OPTICAL MEDIA AND DRIVE

	Qty 1	Qty 10
Maxtor OC400, WORM media, 386MB, 512 byte	\$39	\$25
Maxtor OC800, WORM media, 786MB, 512 byte	\$79	\$49
Maxtor OC1000-1024, Erasable media, 1058MB, 1024 byte	\$149	\$99
Maxtor OC650, Erasable media, 592MB, 512 byte	\$129	\$95

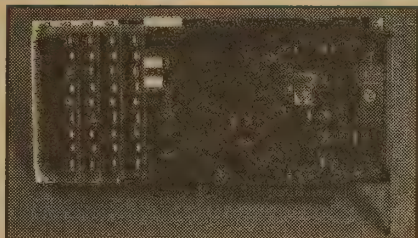
NEW CSC IDE AND SCSI FASTCACHE CONTROLLERS

	Qty 1	Qty 10
CSC Fastcache IDE, REV B, 2HD/4FD, 0K RAM installed No drivers are required for DOS or OS2 applications; cache to 64MB, supports 4 floppies including 2.88MB drives	\$175	\$139
CSC Fastcache-64 SCSI, 7HD/4FD, 1MB cache installed Supports up to 7 SCSI hard, tape and CD-ROM, cache expands to 64MB, supports 4 FD, incl. 2.88 MB drives	\$295	\$195
CSC Fastcache-64 sold w/free 2.88MB FD or 4 MB cache	\$395	

FULL FIVE YEAR WARRANTY STANDARD ON ALL CSC CONTROLLERS!



CSC SCSI FASTCACHE ONLY \$295



CSC IDE FASTCACHE ONLY \$175

NEW DISK CONTROLLERS

	Qty 1	Qty 10
DTC 6280, 16 bit, ESDI, 1:1 interleave, 2HD/2FD	\$69	\$59
DTC 6282-24, 16 bit, ESDI, HD/FD, 24 MBit, 32K cache	\$129	\$120
DTC 3280AS, 16 bit, SCSI, ASPI, w/Novell, OS2, CD-ROM drivers	\$149	\$139
SDC800, economy 8 bit SCSI for DOS	\$29	\$22
WD1007AB, Western Digital, 16 bit ESDI, 2HD/2FD	\$69	\$49

NEW TAPE DRIVES

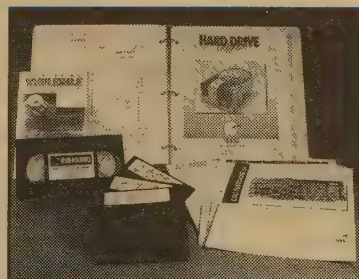
	Qty 1	Qty 10
WANG1300 WangDat SCSI Tape Drive, HH, 1.3GB, 4 mm	\$895	\$795

NEW DRIVES HAVE A ONE YEAR WARRANTY; EXTENDED WARRANTIES ARE AVAILABLE

HARD DRIVE BIBLE: 5th EDITION, WITH INSTALLATION VIDEO

\$39.95

The Hard Drive Bible is an encyclopedia of information on hard drives. It contains installation instructions, jumper settings, drive parameter tables, and setup information on hundreds of hard, optical, and tape drives. Also included are jumper settings and compatibility information on controller cards and driver software. Don't miss the benchmark chapter with performance and reliability test reports. This book and the included software are essential for all dealers and system integrators who install hard drives.



Our New Showroom is Now Open at 730 N. North Pastoria Avenue in Sunnyvale.



Visit our new retail showroom on Pastoria Ave. in Sunnyvale, just off Mathilda and Hwy. 101. All of the products advertised here are on display. We don't use "call" instead of listing a price. Everything is right up front. Skilled sales and support staff will advise you on your hard disk needs and problems. They'll be glad to make recommendations for hard drive upgrades for DOS, OS/2, Windows, Macintosh, Sun, and Novell applications.

Maxoptix, Maxtor, Seagate, Toshiba, Tahiti I, Micropolis, DTC, WangDAT, Sun, OS/2, and Novell are registered trademarks of their respective companies.

QUALITY REFURBISHED DRIVES

QUALITY REFURBISHED ESDI HARD DRIVES

	Qty 1	Qty 10
Maxtor 8610E, FH, 510MB, 16 ms, 1 year	\$695	\$595
Maxtor 9380E, FH, 335MB, 16 ms, 90 day	\$549	\$479
Maxtor 8800E, FH, 660MB, 13 ms, 1 year	\$895	\$849
Maxtor 8610ER, FH, 510MB, 16 ms, 1 year	\$695	\$595
CSC 1.3E kit, FH, 1300MB, 13 ms, w/drive, controller, cables, 1 yr	\$1395	\$1295

The CSC 1300Mb high performance drive kit offers rock-solid 13 ms ESDI performance that blows any IDE drive away! A fast 22 Mbit/sec interface and true 13 ms average seek coupled with a 20 head design make these ideal for network servers and workstations. Sold as preformatted kits with a new 24 Mbit/sec DTC cache controller. Quantities are limited so call soon to avoid disappointment!

QUALITY REFURBISHED SCSI HARD DRIVES

	Qty 1	Qty 10
Maxtor LXT340SR, 3.5", 340MB, 15 ms, 1 year	\$695	\$595
SPECIAL: Maxtor LXT340SR + Fastcache 64 + 4 MB cache	\$795	\$695
Maxtor LXT200S, 3.5", 201MB, 15 ms, 1 year	\$349	\$295
"THE TANK" Maxtor 8760SR, FH, 660MB, 16.5 ms, 1 year	\$895	\$695
Maxtor LXT535SR, 3.5", 535MB, 12 ms, 1 year	\$895	\$795
Maxtor 8380SR, FH, 361MB, 14.5 ms, 90 day	\$595	\$549
Maxtor PO-12S, FH, 1.2GB, 13 ms, 1 year	\$1295	\$1195
Maxtor PI-17S, FH, 1.7GB, 13 ms, 1 year	\$1795	\$1695

PACKAGE SPECIALS:

Maxtor 8760S 660MB, 16.5ms, w/non-caching 16-bit controller.....	\$995
Maxtor 8760S w/Fastcache controller + 1MB.....	\$1095

QUALITY REFURBISHED IDE HARD DRIVES

	Qty 1	Qty 10
Maxtor LXT200A, 3.5", 201MB, 15 ms, 1 year	\$349	\$295
Maxtor LXT213A, 3.5", 213MB, 14 ms, 1 year	\$369	\$339

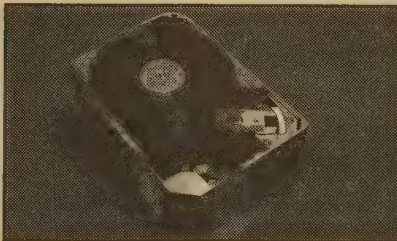
REFURBISHED OPTICAL DRIVES

	Qty 1	Qty 10
Maxtor RT800S, FH, SCSI, 800MB, WORM	\$395	\$349
Maxoptix Tahiti I, SCSI optical drive, 1 GB, 35 ms, 90 day	\$1295	\$995

The Maxoptix Tahiti I drive is a high performance erasable optical drive which uses 650MB ISO and 1 GB(!) Maxoptix cartridges. The removable cartridges are virtually indestructible and as fast as many hard drives! Need another gigabyte? Just pop in an inexpensive erasable disk! The cartridges are rugged, erasable, with an unlimited useful life. These drives are available as internal or as external units.

SPECIAL: CSC Tahiti Megatower - Complete external Tahiti-I drive, perfect for PC, MAC, or Sun applications.....

\$1295



640 MB Maxtor 8760S \$895



1 GB Megatower \$1295

CSC factory refurbished drives are available at competitively low prices, and are completely rebuilt, not just repaired. All drives are burned in, and tested using final test factory equipment. Every refurbished drive is backed by CSC's fast-turnaround 90 day or one year warranty, and extended warranties up to 5 years are available. All CSC refurbished drives meet or exceed manufacturer's new drive specifications. You won't find a better buy.

ORDERS AND INFORMATION:

Call for a free catalog and price list. Advice is always free! We gladly accept VISA or Mastercard orders in addition to COD and prepaid orders. There is never a surcharge for credit card orders. Call today for information. Honest formatted drive capacities are listed in this ad! Prices are subject to change without notice.



CORPORATE SYSTEMS CENTER

730 North Pastoria Avenue
Sunnyvale, California 94086

Phone: (408) 737-7312

FAX: (408) 737-1017

Call between 7:30 AM and 5:30 PM PST, M-F, for advice; and to check stock and place your order. Most orders are shipped within 48 hours. UPS and Federal Express surface, second day, and next day shipping are available. Economy truck shipping is available for large orders upon request. Fed-Ex Saturday delivery is available in most areas.



INDUSTRY INSIGHT

UNIX News, Apple Announcements

BY PAUL
HOFFMAN

NOVELL BUYS UNIX FROM AT&T

AT&T is getting out of the operating system business by selling its UNIX System Laboratories (USL) to Novell, the largest manufacturer of PC networks. With the acquisition, Novell now controls the destiny of the third major PC operating system and could give Microsoft some real competition for workstation PCs in the future.

No one at Microsoft is quaking in their boots, of course, because UNIX is still a tiny part of the PC operating system market. However, Novell could price UNIX for the PC low enough to significantly hurt Windows NT before it is even released.

By buying USL, Novell gets many things. Most importantly, it gets the rights to sell a "real" operating system, much more robust than Novell's DRDOS. This is very important, since Novell's major product, NetWare, can easily be confused with an operating system, and Novell often must work hard to match NetWare with other operating systems. Novell also gets to control UNIX's future, which could be very important for PC users if UNIX gains parity with Microsoft's Windows NT, or even with IBM's OS/2. Novell also gets an incredible research arm from AT&T, one which would be almost impossible to assemble on its own.

Buying UNIX could really help Novell, given that its most important customers, big business, already have major investments in UNIX systems, particularly as network servers. Novell says that the acquisition is meant to help people who are converting from mainframe operating systems to more local solutions. Since the same companies often have NetWare networks that they need to interconnect to UNIX networks, Novell could make the customer's lives much easier, while still selling lots of software. Business UNIX users

UNIX is still a tiny part of the PC operating system market. However, Novell could price UNIX for the PC low enough to significantly hurt Windows NT before it is even released.

have generally applauded the announcement.

On the other hand, many UNIX users worry that Novell will lose sight of UNIX's goals by overemphasizing its networking options. UNIX was first and foremost an open system, meaning that (for a hefty price) it was easy to adapt to different hardware due to the way that AT&T distributed the source code. Under Novell's control, UNIX could become more proprietary, at least its networking parts. Still, it would be foolish of Novell to spend \$350 million on an operating system, then turn around and anger its loyal installed base. Current UNIX users also worry that Novell will overemphasize smaller computers (such as PCs) at the expense of UNIX's traditional base of mid-sized computers.

The timing of the announcement is su-

perb. Microsoft is terribly late with Windows NT, and developers say that the prerelease versions are not very stable. Large companies that are testing Windows NT are not very happy with it, although many had resigned themselves to having to use it on their high-end PCs. Now, many will wait another year to see what comes out of Novell's USL, in hopes of avoiding the need to scrap UNIX. If Novell makes a quick, big splash with a UNIX that has better networking and few bugs, they may keep Microsoft from encroaching on UNIX's territory. That would leave Windows NT as mostly an upgrade from Windows, and that market is much smaller than what Microsoft needs to make Windows NT "the platform of the future."

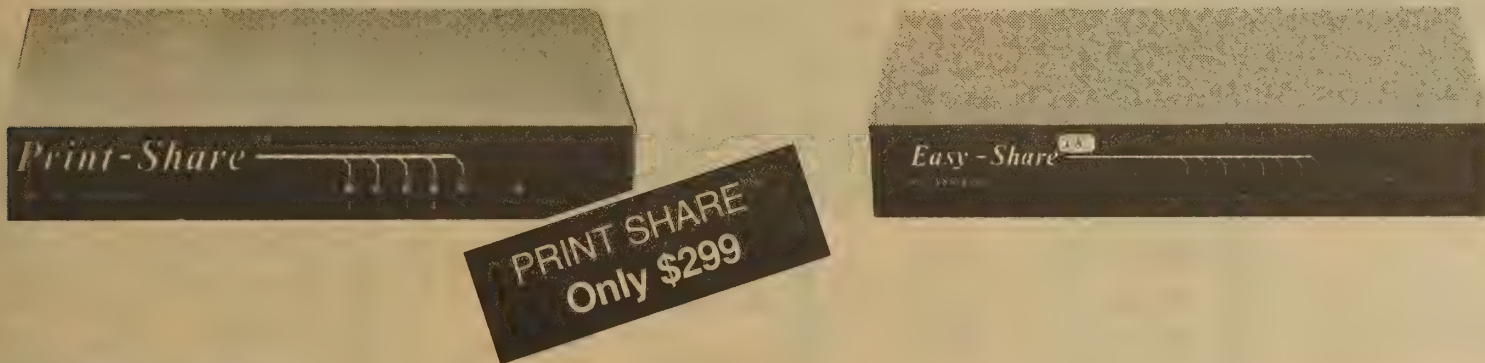
The deal cost Novell about \$350 million, or



Copyright © 1993 by Paul Hoffman. All rights reserved. Paul Hoffman is an industry analyst who has been covering microcomputer technology for ten years. He can be reached on Internet (phoffman@well) or CompuServe (71545,346). He also writes popular microcomputer books.

TANSTA AFL

Difficult to pronounce, even more difficult to spell,
easy to install, economical to buy and a cinch to use.



"What our customers say . . .

"We have yet to exceed the buffer capacity even though we often drive Freelance graphics at full page 300 dpi resolution."

"... gone are the memory requirements and control problems associated with local print spoolers."

"The installation is just barely more complex than plug-it-in-and-go."

"I had it running within 20 minutes of receiving it . . ."

"I am writing to let you know of the great success that we have had with your company's product. We currently have over forty people connected into the Easy-Share boxes."

"Since purchasing the Easy-Share for our lazer printer, our Processing Department has been running continuously without a flaw."

What our VAR'S say . . .

"Easy-Share devices stand out for their reliability, capability, and ease of use. We have now configured over 150 computer systems."

"Our clients have been very favorably impressed with your products because of their reliability, ease of installation, flexible configuration and cost effectiveness."

What the editors say . . .

"Priced very affordably."

"... just the right combinations of 'switchability' and buffering to solve most resource-sharing problems."

"It provides all the features most connectivity arrangements need, including software steering."

"... a down-to-earth, practical solution."

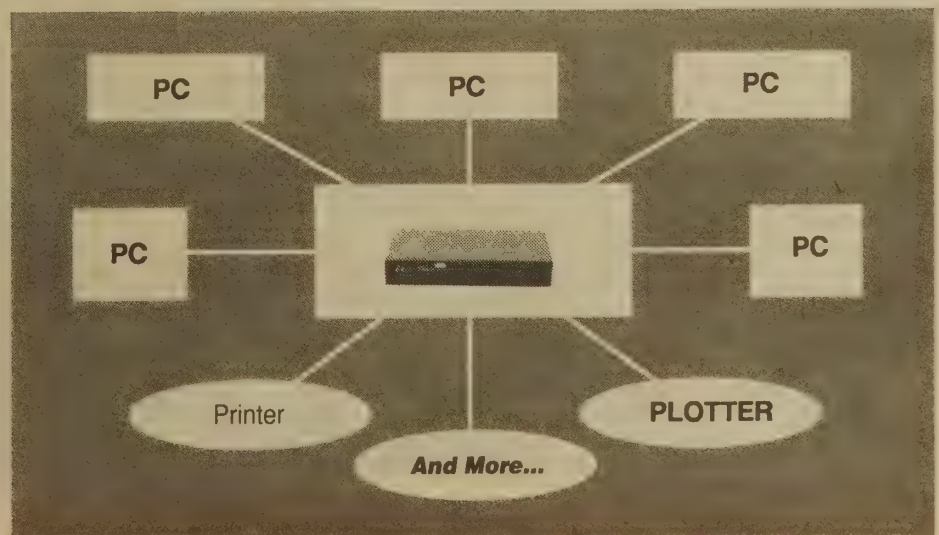
Printer and peripheral sharing solutions.

- Connect any combination of printers, plotters or modems.
- Guaranteed compatibility with all of your application software.
- No more waiting to print.
- No software drivers to load or run.
- Automatic spooling.
- 2 year warranty

Call 1-800-776-5676 Today

TanstaafL Mfg., Inc.

1800 Wyatt Drive, Suite 6, Santa Clara, CA 95054
408-748-9330



**BEST PRICE
GUARANTEED!**

**9TH YEAR
IN BUSINESS**

BAY AREA COMPUTERS

Guarantees the very lowest prices.

Quark XPress FOR WINDOWS

- The Choice For Desktop Publishing Worldwide
- Now In Windows

\$569

Now in Stock

CREATIVE LABS

MultiMedia Upgrade Kit

\$599

- External CD-ROM Drive
- CD Gallery
- MacroMind Action
- Sound Blaster Pro
- MIDI Interface
- Stereo Amplifier + Mixer

QMS Color Laser

- 5 Meg
- 300 DPI
- POSTSCRIPT

\$2888

IBM Model 90

- 200 Meg
- 4 Meg RAM
- SVGA
- 101 Keyboard

\$1999

OKIDATA OL 400

- 4 PPM
- 300 DPI
- 17 FONTS
- 200 SHEET TRAY

\$575

COMPAQ DESK PRO 386/25E

- 386/33 \$1699
- 386/25M \$1699
- 386/16 \$999

\$1599

COMPAQ CONTURA 84/4

- WINDOWS/
WORKS
- DOS/TRACKBALL

\$1588

IBM MODEL 95

- 200 MEG
- TOWER
- SVGA
- 4 MEG RAM

\$2499

TOSHIBA T-1800

- 60 MEG HD
- 2 MEG RAM

\$1299

TOSHIBA T-1850

- 120 MEG HD
- 386SL/25
- 4 MEG RAM

\$1888

COMPAQ COLOR CONTURA

- 386SL/25
- 4 MEG RAM
- DOS
- 80MB \$2099
- 120MB \$2299

FAX-MODEMS

- SUPRA 14.4 (ext) ... \$329
- POCKET 96/24 \$149
- 96/24 (int) \$79
- SUPRA 14.4 Int \$269

TOSHIBA 4400SX

- 4 MEG RAM
- 120 MEG HD
- 486/25 MHz
- 386SX/25

\$2349

TOSHIBA T-4400C

- 120 MEG HD
- 2 MEG RAM
- ACTIVE COLOR

IN STOCK!

CEDARS Power, Performance & Price

*Includes Mouse, DOS, Windows

486/50DX*

- 8MB RAM
- 200MB Hard Drive
- 1.2 & 1.44 Floppy Drive
- SVGA System
- 1 MB SVGA Card
- FAX/Modem

\$1999

486/33DX*

- 4MB RAM
- 200MB Hard Drive
- 1.2 & 1.44 Floppy Drive
- FAX/Modem
- SVGA System

\$1699

386/33*

- 4MB RAM
- 120MB Hard Drive
- 1.2 & 1.44 Floppy Drive
- FAX/Modem
- SVGA System

\$1288

Macintosh Accessories

- E-MACHINE 16" MONITOR **\$599**
- CMS 660 EXT HARD DR. **\$1499**
- APPLE ETHNT TRANSCEIVER **\$79**
- SUPRA 14.4 FAX MODEM **\$329**
- ASANTE NETWORK 10BT CARDS **\$79**
- POWERBOOK CASES **\$89**

Authorized Dealer
HEWLETT
PACKARD

COMPAQ
NEC
TOSHIBA
EPSON*

AST

AT&T
Computer
Systems

IBM

BAY AREA



COMPUTERS

Our 9th Year
In Business



Prices subject to
stock on hand.
Prices reflect 3%
cash discount.

Hours:
9-7 M-F
11-5 Sat.

Prices good thru 3-8-93

(415) 393-9600

130 Sansome St., San Francisco, CA 94104 at Bush

Bring this ad in to get these prices!

**BEST PRICE
GUARANTEED!**

BAY AREA COMPUTERS

**9th Year
in Business**

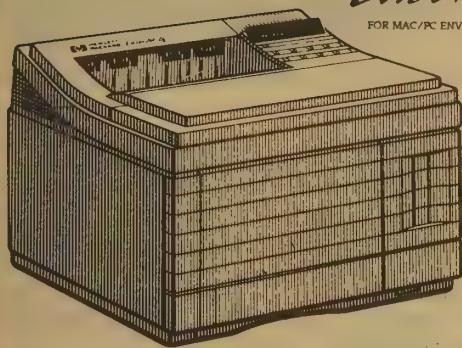
is your source for **hp** HEWLETT PACKARD *Computers, Printers, & Plotters*

We guarantee the lowest prices

LaserJet 4
FOR PC/WINDOWS USERS

LaserJet 4m
FOR MAC/PC ENVIRONMENT

\$1369



LaserJet 4

For PC/Windows Users

LaserJet 4m

For Mac/PC Environment

**CALL
FOR BEST
PRICE!**

HP LASERJET 4 PRINTER

- Resolution Enhancement technology and microfine toner for superior output quality
- Fast 8 ppm printing for complex document
- 6MB memory standard
- Additional network capabilities (optional)

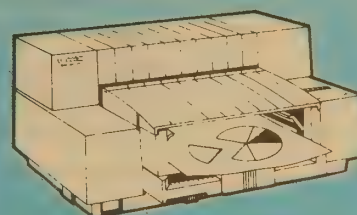
hp HEWLETT
PACKARD

DESKJET 500, 500C, 550C

**500
\$379**

**500c
\$499**

**550c
\$689**



550c

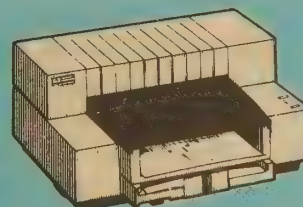
- 300 dpi printing
- 7 ppm in best mode
- Extremely quiet operation
- 3 year manufacturer's warranty

DESKWRITER 500, 500C, 550C

**Deskwriter
\$389***

**Deskwriter c
\$499***

**Deskwriter 550c
\$689**



DW550c

- Affordable laser-quality printing
- 300 dpi color printing
- Wide variety of built-in fonts
- 3 year warranty

* Plus \$50 Rebate

LaserJet IIP Plus Printer

- Lowest price of any HP LaserJet printer for the most affordable solution
- 300 dpi text and graphics provide publication quality printing
- Small footprint makes this the ideal desktop HP LaserJet printer
- Support by virtually all popular PC software packages ensures maximum use
- Paper handling, additional memory, printer language and font accessories expand functionality



\$768

HP FAX-310

- Advanced features and plain-paper for one low price
- No more flimsy thermal faxes to recopy
- Better output quality than thermal fax machines

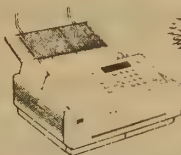


\$1099*

* After Rebate

LaserJet FAX

Turns your HP LaserJet into a FAX machine



\$688*

* After Rebate

LaserJet IIIP Printer

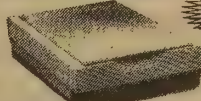
- Superior 300-dpi print quality
- PCL5 allows you to scale type to thousands of sizes
- All the HP LaserJet III printer features in a compact size and at a low price
- Prints fonts, graphics and complex documents faster than other laser printers in its class



\$939

HP Scanjet IIC Scanner

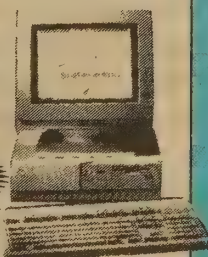
- Ideal for both monochrome and color graphics and text
- High quality 400 dpi resolution
- Fast, one pass image scanning with superior color registration
- Automatic exposure selects the best brightness and contrast for you
- Live preview for immediate feedback on changes



Best Price

VECTRA 486/33N

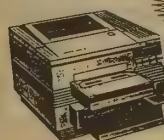
- 4 MB
- 1.44 Floppy Drive
- UVGA
- 101KB



\$1499

LaserJet IIIsi Printer

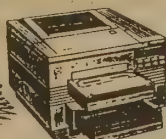
- Fast 17-ppm printing
- 300DPI resolution
- HP PCL5 language
- Networkable



\$3199

LaserJet IIID Printer

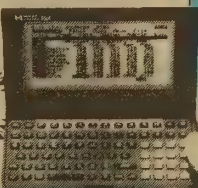
- Advanced paper-handling
- Resolution Enhancement for the best 300-dpi printing
- Ideal for high-volume, multi-user environments
- Wide variety of easy-to-use, scalable, built-in typefaces
- Optical envelope feeder handles 50 envelopes



\$2249

HP 95LX Palmtop PC

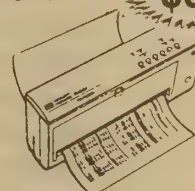
- Lotus 1-2-3
- 1Meg RAM



**\$568
In stock**

HP DeskJet Portable Printer

- 300dpi Laser-Quality Printing
- Small, Lightweight Size—Weighs just 4.4 lbs.
- Fast Print Speed—up to 3 Pages Per Minute
- Prints up to 100 Pages on a Single Battery Charge



\$389

HP Portable DeskJet Accessories

- Worldwide Rapid Recharger \$89
- Battery \$39
- Carrying Case \$89
- Cut Sheet Feeder \$44

Authorized Dealer

hp HEWLETT
PACKARD

COMPAQ

NEC

TOSHIBA

EPSON®

OKIDATA



IBM

BAY AREA



COMPUTERS

*Our 9th Year
In Business*



**Hours:
9-7 M-F
11-5 Sat.**

Prices subject to
stock on hand.
Prices reflect 3%
cash discount.

Prices good thru 3-8-93

(415) 393-9600

130 Sansome St., San Francisco, CA 94104 at Bush

Bring this ad in to get these prices!

four times USL's annual revenues. That's considered to be reasonable by industry standards, even for companies that are in only nominally related fields. In Novell's case, because USL is so close to Novell's current market, that could be considered a very good deal, especially if Novell decides to expand low-end UNIX sales beyond USL's current market. Because Novell owns DR DOS, any future Intel-based UNIX can be expected to have almost flawless MS-DOS compatibility and integration.

Assuming that the deal is approved by all shareholders (as it is expected to be), PC users can expect to find UNIX as the hub for more and more network servers. Even for a small network, the choice between the industry standard NetWare and some flavor of Novell's UNIX will be attractive, and will deny Microsoft another sale of Windows NT.

Many feel that this move will hurt OS/2 more than Windows NT because of OS/2's weak networking features. For PC power users who need a multitasking operating system that is well-tied to a network, Novell can make a much stronger case for UNIX than AT&T ever did. On the low end, Windows for Workgroups will probably be quite safe, but the merger certainly should give software developers and Microsoft something to think about.

APPLE ANNOUNCEMENTS PRESAGE PRINTER PRICE DROP

Most people think of Apple as a computer manufacturer, but peripherals have always been a major business for them. When Macintosh sales slowed in the mid-1980s, Apple was the first to hype "desktop publishing" with its new LaserWriter printer.

With its recent announcements of new printers at well below current market prices, Apple is again stepping up its campaign to be more than just a computer vendor. The new flexible printers will certainly force other major printer manufacturers to drop their prices, particularly in the PC market.

The \$2100 LaserWriter Pro 600 and the \$2500 630 will make fast 600 dots-per-inch printing much less expensive for the average user. Six hundred dpi printers print at four times the quality of standard 300dpi printers, and the resulting higher density is particularly important for graphics. Currently, the only other inexpensive 600dpi printer on the market is the new Hewlett-Packard LaserJet 4, and few dealers have it in stock.

Like the LaserJet 4, the LaserWriter 600 prints at 8 pages per minute and uses a new fine-grain toner. The list price of \$2100 is \$100 below HP's, but they both will probably end up costing about \$1800 retail, and the

600 has many more features. Note that the 600 comes with 4MB of RAM and the 630 with 8MB of RAM, compared to the 2MB for the LaserJet 4.

One huge benefit that the LaserWriter Pro 600 offers over the LaserJet 4 is the built-in capability to link to both Macs and PCs at the same time. The printer comes with a LocalTalk port for connections to Mac networks, a parallel port, and a serial port. A higher-cost version of the 600, the 630, also comes with a built-in EtherTalk port for high-speed networks. Switching between the ports is automatic, so that companies that have Macs and PCs (or networked and non-networked PCs) can use a single printer. In addition, support for both TrueType and Adobe Level 1 fonts is built into the printers, as well as Adobe PostScript Level 2 software and PCL 4+ page description languages.

Apple is not just in this for printer sales. The 600 and 630 also come with Macintosh system software called FinePrint and PhotoGrade to improve the output beyond what PC users will see. FinePrint smooths the edges on text and graphics to make them appear to have more detail. PhotoGrade gives the laser printer near-photographic quality by adapting grayscale images to ninety levels of gray (instead of the sixty used on most other printers). People producing reports and documents with photographic grayscale images will probably find that the output of the 600 is close to that of an expensive 1200 dpi printer, yet costs about 6¢ a page on glossy stock instead of \$5 a page at graphics output shops. FinePrint and PhotoGrade are currently only available for the Macintosh, but the printers come with standard software drivers for Microsoft Windows.

Even with these advantages, the new LaserWriters have many of the same faults as the older models. The biggest difference between the 600/630 and the LaserJet 4 is that the Apple models have no text error messages on the printer. Instead, you get four lights that blink or stay lit in case of errors. Beginning users (and, in fact, most other users) can rarely figure out what these blinking lights mean, particularly when they are first installing the printer. The LaserJet 4 and other competing printers tell you in relatively plain English what is wrong. Although this may seem like a minor problem, it is one that has frustrated Apple printer users since the first LaserWriters came out.

In addition, Apple's standard printer software continues to give cryptic messages (or no messages) when the inevitable problems occur, further frustrating beginning users.

At the same time, Apple announced its first color printer, a 360dpi ink cartridge printer costing \$2350, and a new 24-bit color scanner

costing \$1350. The scanner should have a significant impact in the scanner market because it brings much higher resolution (1200 dpi) with color at a street price of \$1000. The scanner, called the ColorOneScanner, comes bundled with the new version of Ofoto scanning software and Apple's new ColorSync color standardization software. Many other software and hardware companies immediately pledged support for ColorSync, and it is clear that the standard will take hold quickly. ColorSync assures that an image that is scanned or created with a paint program will have the same colors when it is printed.

Although many people find printers mundane, they are very important to most users. Deciding how much to spend on specific printer features is never easy, and major price drops often compel users to buy better, faster printers. Apple will clearly have a strong advantage over smaller printer manufacturers in the short term with its LaserWriter 600 and 630 printers, although Hewlett-Packard will continue to have strong customer loyalty. If Apple improves the now-antiquated user interface on its printers, it could even make inroads into HP's traditional client base.

PRESIDENT OF SCO RESIGNS AFTER HARASSMENT LAWSUITS

Larry Michels, president and major shareholder in the Santa Cruz Operation (SCO), resigned last month amid accusations that he sexually harassed many women working for the company and fired those who would not give in. Weeks earlier, he had been sued by three administrative assistants who accused him of grabbing their breasts and buttocks, forcing them to kiss him on the lips, and making lewd sexual suggestions. In the days following the lawsuit, it became public that other women had sued, and one had settled privately. Later, a fourth woman joined the suit, claiming that she was fired after she resisted Michels' advances.

Michels denied that his behavior was harassment, and he and SCO have pledged to fight the suits. He said that he resigned "to place the interests of the company and its employees ahead of my own."

SCO insists that it will defend itself against the lawsuits. If it loses any of the suits, it could be very difficult for it to get future contracts with major companies, since almost every company has strong anti-harassment rules. Even if the suits are settled out of court, the exposure of the problem will significantly hinder SCO's chances in a public offering, due to shareholder's worries about future suits as well as the working atmosphere at the company. ■

GOLDEN MICRO COMPUTERS

**5 Years Labor Warranty
1 Year Parts Warranty
Extended Warranty Available!**

EVERY SYSTEM INCLUDES:

4 MB RAM (except 286 system which uses 1MB RAM),
1.2 & 1.44 MB Floppy Drive, 120 IDE Hard Disk, 1 MB
SVGA Card and SVGA (1024x768, .28dp) monitor, IDE/
IO (two serial, one parallel, and one game port,) enhanced
keyboard, minitower or desktop case with power supply.

SYSTEM UPGRADES:

Add \$30 for 256K cache • Add \$150 for Local Bus System
Add \$180 for EISA Systems

486DX 64K DX2-66/DX-50 DX2-50/DX-33 COMPLETE SYSTEMS

- 4MB RAM exp to 32MB
- 8MB Internal Cache
- Shadow RAM

Landmark speed:
220/167/167/151 MHz

\$1489/1399
\$1359/1249

486SX 64K SX-25/SX-20 SLC-25 COMPLETE SYSTEMS

- 4MB RAM exp to 32MB
- 8MB Internal Cache
- Shadow RAM

Landmark speed:
112/90/90 MHz

\$1069/1019
\$1009

386DX 64K 40/33/25 COMPLETE SYSTEMS

- 4MB RAM exp to 32MB

- Shadow RAM

Landmark speed:

65/55/41 MHz

\$999/989
\$979

386SX 25/16 COMPLETE SYSTEMS

- 4MB RAM exp. to 32MB

- Shadow RAM

Landmark speed:

34/23 MHz

\$929/919

286 20/16/12 COMPLETE SYSTEMS

- 1MB RAM exp to 4MB

- Page Interleave

Landmark speed

24/19/16.6 MHz

\$819/809
\$799

CASE & POWER SUPPLY

Minitower w/200 Watt	\$53
Desktop w/200 Watt	54
Mid Tower w/230 Watt	85
Full Tower w/250 Watt	115
200 Watt power supply	31
230 Watt power supply	33
230 Watt AT power	39
250 Watt AT power	41

VGA CARDS

VGA 800x600, 256K	\$24
OAK 1MB	48
Trident 1MB	53
Tseng ET 4000	78
Diamond Speedstar 24	149
Speedstar 24x	179
Stealth w/Sierra	205
Orchid Prodesigner IIs	129
Fahrenheit 1280 w/acc.	205

ADD ON CARDS

MGP	\$14
IDE controller	13
I/O (2s, 1p, 1g)	13
IDE I/O (2s, 1p, 1g)	14
4 Floppy controller	25
MFM controller	30
RLL controller	39
SCSI (16 bit)	65

PRINTERS

Panasonic 1180	\$155
Panasonic 1123	205
Panasonic 1124i	285
Panasonic 1164	365

FLOPPY DRIVES

Teac 1.2 5.25"	\$54
Teac 1.44 3.5"	51
1.2 5.25"	49
1.44 3.5"	46

MISCELLANEOUS

287-10	\$39
387SX25/16	75/65
256-70 SIMM	10
1MB 9x70 SIMM	29
4MB 9x70 SIMM	115
Windows w/mouse	49
Windows	38
MS mouse (OEM)	45
Mouse	12

KEYBOARDS

101 Enhanced	\$20
Maxiswitch	30
Keytronic	33
Focus 2001	38
Zeos-like	32

MODEM

2400 Baud Internal	\$32
9600/2400 Fax/Modem	52
9600 Modem external	185
14,400 modem external	225

MOTHERBOARDS & CPU

286-12/16 or 20	\$59/65
386SX-16/25	93/99
386DX-25 64K	159
386DX-33 64K	165
386DX-40 64K	173
486SX-25 (CYRIX)	175
486SX-20 64K	219
486SX-25 64K	269
486DX-33 64K	415
486DX2-50 64K	525
486DX-50 64K	565
486DX2-66 64K	666

TAPE DRIVES

120 MB Colorado	\$165
250 MB Colorado	245
250 MB Archive	195
120 MB/250 MB Tape	20/23

MONITORS

12" Mono	\$75
14" Mono	89
14" Mono VGA	119
14" SVGA (.39)	210
14" SVGA (.28)	245
14" Non-Int SVGA	280
Socos (Int)	259
Socos (Non-Int)	289
Viewsonic 6E	325
Sony 1304 (Non-Int)	560
NEC 4 FG	745

HARD DISK

40 MB Conner	\$139
80 MB Conner	182
120 MB Conner	235
130 MB Maxtor	240
213 MB Maxtor	345
212 MB Conner	355
340 MB Maxtor	550
520 MB Fujitsu	899
1.05 GB Fujitsu	1480

PC Repairs & Upgrades We come

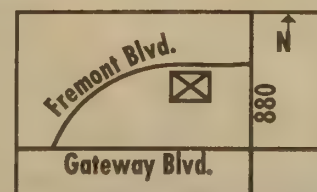
46560 Fremont Blvd, Suite 408

Fremont, CA 94538 FAX (510) 623-0321

(510) 623-0866

Hours M-F 9-6 Sat/Sun 10-4

**GOLDEN
MICRO
COMPUTERS**



"WE'VE GOT THE BEST BOXES IN TOWN"

Plus RT COMPUTERS Offers FREE LIFETIME PHONE SUPPORT!

"RT WORK HORSE"

386 DX40 MHz 64K Cache

- 4 MB RAM 70ns
- Mini Tower w/230 Watts
- 1.2 MB (5.25") Floppy Drive
- 1.44 MB (3.5") Floppy Drive
- 130 MB IDE Hard Disk
- 2H/2F/2S/1P/1G Controller Card
- 14" Super VGA Monitor .28dp
- Trident Super VGA Driver 1MB
- 101 Keyboard
- Serial Mouse
- MS DOS 5.0
- MS Windows 3.1



Other options or substitutions available

\$1199

\$38/MONTH



"RT WORKHOUSE PLUS"

486SX-25 64K Cache

- 4 MB RAM 70ns
- Mini Tower w/230 Watts
- 1.2 MB (5.25") Floppy Drive
- 1.44 MB (3.5") Floppy Drive
- 130 MB IDE Hard Disk
- 2H/2F/2S/1P/1G Controller Card
- 14" Super VGA Monitor .28dp
- Trident Super VGA Driver 1MB
- 101 Keyboard
- 3 Button Mouse
- MS DOS 5.0
- MS Windows 3.1



Other options or substitutions available

\$1295

\$42/MONTH

Easily Upgradable To 486DX!



"RT PREMIER"

486DX 33 MHz 64K Cache

- 4 MB RAM 70ns
- Mid Tower w/230 Watts
- 1.2 MB (5.25") Floppy Drive
- 1.44 MB (3.5") Floppy Drive
- 130 MB IDE Hard Disk
- 2H/2F/2S/1P/1G Controller Card
- 14" Super VGA Monitor .28dp
- Trident Super VGA Driver 1MB
- 101 Keyboard
- 3 Button Mouse
- MS DOS 5.0
- MS Windows 3.1



Other options or substitutions available

\$1499

\$48/MONTH



"RT POWER TOWER"

486DX 50 MHz 256K Cache

- 4 MB RAM 70ns
- 1.2 MB (5.25") Floppy Drive
- 200 MB IDE Hard Disk
- 15" Super VGA Monitor .28dp (Non-Interlaced)
- Orchid Pro Designer Is Driver w/1 MB RAM
- 3 Button Mouse
- MS DOS 5.0
- MS Windows 3.1
- Full Tower w/250 Watts
- 1.44 MB (3.5") Floppy Drive
- 2H/2F/2S/1P/1G Controller Card
- 101 Keyboard



Other options or substitutions available

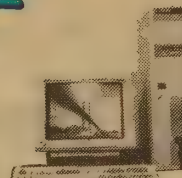
\$2140

\$68/MONTH



"RT POWER TOWER II"

- 8 MB RAM 60ns
- Full Tower w/250 Watts
- 540 MB 32bit SCSI Hard Drive
- 1 MB Cache 32bit SCSI CONTROLLER
- 1.2 MB (5.25") Floppy Drive
- 1.44 MB (3.5") Floppy Drive
- 2S/1P/1G Ports



- 15" NON-INT. SVGA Monitor
- Orchid Pro2s 1 MB SVGA Driver
- 101 Keyboard
- 3 Button Mouse
- MS DOS 5.0
- MS Windows 3.1



\$3499

\$111/MONTH

Other options or substitutions available



"SPECIAL OFFER"

PFS: WINDOWWORKS BUNDLED SOFTWARE
Word Processor, Spreadsheet, Data Base, Communications

\$65⁰⁰

with System Purchase

"RT LOCAL BUS"

486DX 33 MHz or
486DX2 66 MHz LOCAL BUS 256K Cache

- 8 MB RAM 70ns
- Mid Tower w/230 Watts
- 1.2 MB (5.25") Floppy Drive
- 1.44 MB (3.5") Floppy Drive
- 130 MB IDE Hard Disk
- 2H/2F/2S/1P/1G Controller Card
- LOCAL BUS IDE Controller
- 14" Super VGA Monitor .28dp (Non-Interlaced)



- Diamond Stealth Speedstar Local Bus Driver
- 101 Keyboard
- 3 Button Mouse
- MS DOS 5.0
- MS Windows 3.1

33 MHz
\$2125

\$68/MONTH

66 MHz
\$2440

\$77/MONTH



MOTHERBOARD w/CPU

386DX-40 MHz 64K ISA	\$225
486DX-33 MHz 64K ISA	497
486DX-50 MHz 256K ISA	758
486DX-33 MHz 256K EISA	745
486DX-50 MHz 256K EISA	959
486DX-33 256K VESA LB	733
486DX-50 MHz 256K VESA LB	956
486DX-66 MHz 256K VESA LB	1023

HARD DRIVES

40 MB IDE	\$144
80 MB IDE	229
130 MB IDE	295
212 MB IDE	395
340 MB IDE	685

SCSI 1&2

1.2 GB SCSI 1&2

MONITORS

14" 1024x768 SVGA	\$276
14" 1024x768 SVGA NON-INT	354
15" 1024x768 SVGA NON-INT	456
17" VIEWSONIC 7	1138
20" VIEWSONIC 8	1799
21" NEC 6FG	2565

MONITOR CARDS

OAK 512KB	\$44
TRIDENT	63
ET4000	92
ET4000S	102

ORCHID PRO2S

ORCHID FAHRENHEIT 1280/VA-VLB

DIAMOND SPEEDSTAR 24X

DIAMOND STEALTH SPEEDSTAR

NUMBER NINE GXI

MISCELLANEOUS

SERIAL MOUSE

LOGITECH MOUSE

2400 BAUD MODEM INT

96/24 FAX/MODEM

120 MB COLORADO TAPE BACK-UP

250 MB COLORADO TAPE BACK-UP

THUNDERBOARD W/SPEAKERS

MITSUMI CD-ROM

POWER CENTER

1099

1560

264

185

264

\$CALL

\$17.50

74

45

60

210

265

125

275

17.50

"WE BELIEVE EVERY CUSTOMER SHOULD LEAVE OUR OFFICE TOTALLY SATISFIED. THAT'S WHAT WE STRIVE FOR"



RAY TETREAULT
OWNER-RT COMPUTERS



1630 OAKLAND RD.
SUITE #A-112
SAN JOSE, CA 95131

MON-FRI 9-6, SAT 10-4

FAX: (408) 437-1156

408 437-3063



FINANCING
AVAILABLE

PRICES SUBJECT TO CHANGE W/O NOTICE NOT RESPONSIBLE FOR TYPOGRAPHIC ERRORS



Computer Stocks Enter 1993 In Bullish Fashion

Computer stocks continued their bull run into the new year, pushing the Microtimes Stock Index to its record high of 4020.09.

The box score for our industrial indicator during the past month: up 194.27 points, or 5.08%, with advancing issues outpacing declining issues by nearly a 3-to-1 margin.

In contrast, stocks nationally, with the exception of the NASDAQ Composite Index which hit another high of 682.40, ended the month-long trading session on a sour note after a brief bout of profit-taking trimmed December's gains.

Among the computer stocks in the news last month:

•IBM, which ruined many money manager's portfolios in 1992, fell another \$14 a share, off 22.67% last month to \$47.75, slightly above its 52-week low of \$46.63. IBM has cascaded 50% from its 52-week high in July. Among the company's bad news in 1992: it will terminate 25,000 jobs, take a \$6-billion charge against fourth-quarter earnings, and possibly cut its dividend which yielded 9.6% at year-end. IBM was the largest dollar and percentage-loser of the lot last month.

•AT&T, on the other hand, was short-circuited by shareholders last month, as it was swept \$3 a share higher to a new 52-week high of \$51.50. County NatWest cut its rating on AT&T to "accumulate" from "buy" based on the company's high stock price. Separately, the company agreed last month to buy 20% of Canada's Unitel Communications for C\$150 million in a bid to counter MCI's presence in that country. For the year, AT&T was up 30.7%.

•Novell rallied 75 cents a share, or 2.4%, to conclude matters at \$31.50. Novell and AT&T announced plans last week to jointly develop and market a product to link computer networks with business telephone systems. Novell recently agreed to buy AT&T's Unix Systems Laboratories.

•Intel soared above the \$100-a-share mark for the first time ever before reaching a close of \$102.38 at the period's end. Intel, which traded as high as \$103 a share during the month, has surged lately thanks to strong demand for its products and signs of strength in the U.S. semiconductor market. For the month, Intel sprinted ahead \$21.88 a share, or 27.17%, taking largest dollar-gained honors of all the stocks in the accompanying table. ■

EXCH	COMPANY	TICKER SYMBOL	CLOSING PRICE 12/10/92	CLOSING PRICE 01/11/93	NET CHANGE IN MONTH	PERCENT CHANGE IN MONTH	P/E RATIO	ANNUAL DIVIDEND RATE	ANNUAL DIVIDEND YIELD	ANNUAL HIGH	ANNUAL LOW
SOFTWARE											
OTC	Adobe	ADBE	32.00	34.00	2.00	6.25	16	0.32	0.94	65.75	25.25
OTC	Aldus	ALDC	14.25	14.50	0.25	1.75	24	0.00	0.00	36.50	10.25
OTC	Autodesk	ACAD	46.75	49.75	3.00	6.42	29	0.48	0.96	56.50	23.25
OTC	Borland	(L) BORL	20.75	20.25	-0.50	-2.41	-	0.00	0.00	82.75	19.75
OTC	Informix	(H) IFMX	33.50	34.75	1.25	3.73	26	0.00	0.00	37.75	8.81
OTC	Lotus	LOTS	20.50	19.75	-0.75	-3.66	12	0.00	0.00	38.75	14.75
OTC	Microsoft	MSFT	89.00	89.13	0.13	0.14	34	0.00	0.00	95.00	65.50
OTC	Novell	NOVL	30.75	31.50	0.75	2.44	38	0.00	0.00	33.50	22.50
OTC	Oracle	(H) ORCL	22.88	29.50	6.63	28.98	48	0.00	0.00	30.75	12.00
OTC	Software Publishing	SPCO	9.00	9.25	0.25	2.78	-	0.00	0.00	26.25	6.75
OTC	Symantec	SYMC	14.00	13.00	-1.00	-7.14	48	0.00	0.00	51.00	5.88
HARDWARE											
OTC	Apple	AAPL	57.25	64.13	6.88	12.01	15	0.48	0.75	70.00	41.50
OTC	AST Research	ASTA	19.63	22.25	2.63	13.38	12	0.00	0.00	24.50	11.25
NYS	Commodore	(L) CBU	7.88	8.38	-1.50	-19.05	91	0.00	0.00	19.25	6.25
NYS	Compaq	(H) CPQ	43.00	50.50	7.50	17.44	22	0.00	0.00	50.50	22.25
NYS	Digital Equipment	(L) DEC	33.50	35.25	1.75	5.22	-	0.00	0.00	65.50	30.38
OTC	Dell	(H) DELL	41.00	46.38	5.38	13.11	21	0.00	0.00	48.50	15.00
NYS	Hewlett-Packard	HWP	66.63	72.75	6.13	9.19	21	0.80	1.10	85.00	50.25
NYS	IBM	(L) IBM	61.75	47.75	-14.00	-22.67	-	4.84	10.14	100.38	46.63
NYS	Silicon Graphics	SGI	26.50	28.88	2.38	8.96	-	0.00	0.00	29.75	14.13
OTC	Sun Microsystems	(H) SUNW	33.25	37.38	4.13	12.41	25	0.00	0.00	37.75	22.50
NYS	Xerox	(H) XRX	77.88	83.88	6.00	7.70	20	3.00	3.58	85.75	66.75
NYS	Tandy	(H) TAN	29.88	29.38	-0.50	-1.67	14	0.60	2.04	31.75	22.25
CPU'S											
NYS	Advanced Micro Devices	AMD	16.88	19.88	3.00	17.78	7	0.00	0.00	21.50	7.38
OTC	Intel	(H) INTC	80.50	102.38	21.88	27.17	26	0.40	0.39	103.00	46.50
NYS	LSI Logic	(H) LSI	10.88	10.88	0.00	0.00	-	0.00	0.00	11.38	4.88
NYS	Motorola	(H) MOT	103.00	112.75	9.75	9.47	28	0.88	0.78	112.75	68.50
COMMUNICATIONS											
NYS	AT&T	(H) T	48.50	51.50	3.00	6.19	20	1.32	2.56	51.50	36.63
NYS	BellSouth Corp.	BLS	50.13	52.13	2.00	3.99	15	2.78	5.29	55.50	43.38
OTC	MCI	(H) MCIC	37.88	41.25	3.38	8.91	19	0.10	0.24	41.25	29.50
NYS	Northern Telecom	NT	42.13	40.88	-1.25	-2.97	21	0.36	0.88	49.25	30.50
NYS	Pacific Telesis	(H) PAC	44.88	43.38	-1.50	-3.34	17	2.16	4.98	47.00	36.88

KEY: NYS = NEW YORK ASE = AMERICAN OTC = OVER THE COUNTER
(H) = NEW HIGH REACHED IN PERIOD (L) = NEW LOW REACHED IN PERIOD

MARKET DIARY:

ADVANCES.....	23
DECLINES.....	8
UNCHANGED.....	1
NEW HIGHS.....	13
NEW LOWS.....	4

MOST ACTIVE ISSUES:

LARGEST DOLLAR GAINER.....	Intel.....	\$ 21.88
LARGEST DOLLAR LOSER.....	IBM.....	\$ -14.00
LARGEST PERCENTAGE GAINER.....	Oracle.....	28.96 %
LARGEST PERCENTAGE LOSER.....	IBM.....	-22.67 %

	CLOSE 12/10/92	CLOSE 01/11/93	NET CHANGE IN MONTH	PERCENT CHANGE IN MONTH
MICROTIMES STOCK INDEX	3825.83	4020.09	194.27	5.08
DOW JONES INDUSTRIAL AVERAGE	3312.19	3262.75	-49.44	-1.49
STANDARD & POOR'S 500 STOCK INDE	434.64	430.95	-3.69	-0.85
N.Y.S.E. COMPOSITE	238.97	237.09	-1.88	-0.79
NASDAQ COMPOSITE	658.93	682.40	23.47	3.56

DATE	MICRO TIMES	DOW JONES
06/05/92	3562.74	3398.69
07/02/92	3182.43	3330.29
07/31/92	3367.19	3393.78
08/28/92	3198.48	3267.61
09/25/92	3313.28	3250.32
10/23/92	3536.03	3207.64
12/10/92	3825.83	3312.19
01/11/93	4020.09	3262.75

Copyright Nordby International, Inc. Boulder, CO

This information is based on sources believed to be reliable, and while extensive efforts are made to assure its accuracy, no guarantees can be made. Nordby International and Microtimes assume no liability for any inaccuracies. For phone numbers, addresses or any additional financial information on any of the above companies call Nordby International at (303) 449-0328.

Public Access To Public Records—Part I

Implications Of The California Public Records Act

BY JIM WARREN

These columns concern the realistic near future.

This one concerns citizen access to an invaluable taxpayer asset—information held by local, state, and federal governments, increasingly computerized at massive public expense.

Experts estimate that by mid-decade—only two years away—at least half of all office records and files will be originated (created), annotated (modified or updated), stored (filed), indexed and cross-

REALIZABLE FANTASIES

indexed (linked, classified, related), retrieved (accessed), and exchanged (transmitted) by computer. This is even more true of government records. Furthermore, *moderate* estimates predict that the percentage of such records that are computerized will rise to 80% or more by the decade's end.

Computerized public records pose significant opportunities—and threats—for the people's ability to monitor the people's business.

PUBLIC RECORDS REFORM

For three reasons, this discussion focuses on the California Public Records Act (CPRA): 1. The CPRA is reputed to be one of the better state FOI statutes—even though it has huge imperfections; 2. Legislation in California, New York, and a few other states often impacts federal legislation; 3. There is currently a broad-based effort underway to improve the CPRA. The Reform Coalition (CPRARC) is spearheaded by the California Newspaper Publishers Association and the California First Amendment Coalition, but includes *numerous* other public-interest and watchdog groups.

Note however: All the following issues are equally applicable to local, state, or national freedom-of-information (FOI) provisions in *any* democratic society. (Section references ["§"] hereafter are to the California Government Code.)

The principle: The CPRA opening sentence states, "Access to information concerning the conduct of the people's business is a fundamental and necessary right of every person." [§6250]

DEFINING A MODERN "PUBLIC RECORD"

The decades-old CPRA defines a "public record" as including "any writing containing information relating to the conduct of the public's business prepared, owned, used, or retained by any state or local agency regardless of physical form or characteristics." [§6252(d)]

Next, it says that "writing" means, "handwriting, typewriting, printing, photostating, photographing, and every other means of recording upon any form of communication or representation, including letters, words, pictures, sounds, or symbols, or combination thereof, and all papers, maps, magnetic or paper tapes, photographic films and prints, magnetic or punched cards, discs, drums and other documents." [full text of §6252(e)]

Better still, the state Attorney General opined that a public record is "a thing which constitutes an objective lasting indication of a

writing, event or other *information*, which is in the custody of a public officer and is kept either (1) because a law requires it to be kept or (2) because it is necessary or convenient to the discharge of the public officer's duties and was retained for the purpose of preserving its *informational* content for future use." [Emphasis added; 64 Ops Cal Atty Gen 317, 326 (1981); reference kindly provided by Alameda County Assistant D.A. Don Ingraham.]

The statutory definition seems to focus on physical form. The AG's opinion—more accurately—focuses on a public record as *information*. The statutory definitions need to emphasize that concept, especially as ever more government information becomes less related to its physical form when computerized.

(Note: As a starting point, I submitted possible legislative language to the reform coalition's drafting committee addressing the above and following issues.)

"PUBLIC RECORD" BECOMING ILL-DEFINED

In the old days, "records" were paper instruments—listings, memos, letters, arrest records, complaint forms, reports, budgets, photographs, etc. Later, they included sound recordings, motion pictures, videotapes, etc.

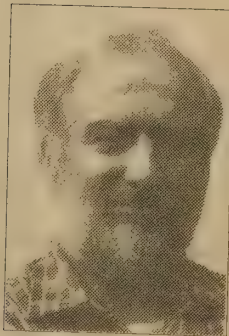
Increasingly, however, records are created, modified, cross-referenced, and stored in digital form—sometimes *only* in digital form. Examples include interdepartmental electronic mail, budget spreadsheets, community and census data in geographic information systems (GIS), etc.

But here's the real ringer: As government data is computerized in relational databases, its component parts are becoming indexed, cross-indexed, inter-related, and commingled in a manner that leaves it unclear where a "record" begins and ends.

Hypothetical(?) example: Assessors' real estate records include assessed value, name and address of owners, etc. Assessed value is related to sales of comparable parcels, stored in Records' title-

In The Flesh

Jim Warren often speaks and lectures about technology, government, freedom and privacy, and also about personal computing's history and future. On January 27, he is the speaker for Santa Clara County's Bench-Bar-Media-Police meeting. February 10, he is the speaker for the Independent Computer Consultants' Association Northern California meeting at the SFO Airport Hilton. February 14, he is the morning keynoter for the Libertarian Party state convention at the Sunnyvale Hilton. March 10, he will chair the Electronic Democracy session in the Third Conference on Computers, Freedom & Privacy at the SFO Airport Marriott.

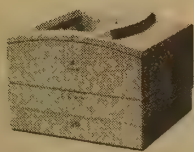


Copyright © 1993 by Jim Warren, 345 Swett Rd., Woodside, CA 94062; emailjwarren@well.sf.ca.us. Permission herewith granted to copy-in-full for any nonprofit use.

NEW PRODUCTS, NEW SAVINGS

Only at Computer Selection

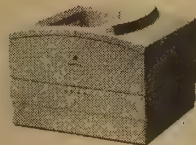
Apple® Laserwriter® Pro 630



- 600-dpi resolution for crisp text
- Optional 300 dpi plus PhotoGrade™
- Comes with 64 scalable fonts
- 100 and 250-sheet tray

\$2399.99

Apple® Laserwriter® Pro 600



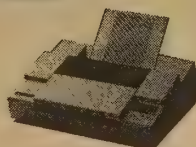
- 300-dpi resolution enhanced w/ FinePrint™
- 100 and 250-sheet tray
- Comes with 64 scalable fonts

\$1999.99

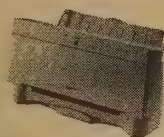
Apple® Color Printer

- 360-dpi resolution
- 64 scalable TrueType™ fonts
- The perfect choice for desktop color printing

\$2199



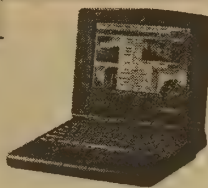
Apple® StyleWriter® II



- 360-dpi for laser-quality printing
- GrayShare™ driver software for gray-scale printing
- 39 scalable TrueType™ fonts

\$325

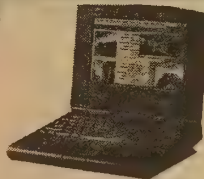
Apple® Macintosh® PowerBook Duo™ 230



- 33-MHz 68030 microprocessor
- 4 MB RAM, 80 MB HD
- 16-gray level display
- highest-performance PowerBook docking system

\$2349.99

Apple® Macintosh® PowerBook Duo™ 210



- 25-MHz 68030 microprocessor
- 4 MB RAM, 80 MB HD
- 16-level gray scale display
- the best of both worlds

\$2049.99

Apple® Macintosh® Duo™ Dock



- Supports external Apple monochrome and color displays weighing up to 50 pounds
- Includes two NuBus™ slots
- Supports six SCSI devices

\$1025

NEW SYSTEM

Apple®



Authorized Dealer

Apple® Macintosh® PowerBook™ 160



- 25 MHz 68030 processor
- 4 MB RAM, 40 MB HD
- Internal Apple SuperDrive
- Video-output capabilities
- 16 level gray-scale display

Now in Stock!

\$2199.99

Apple® Macintosh® Classic® II



- 68030 processor, 16 MHz
- Internal Apple SuperDrive
- 2 serial ports, ADB, SCSI and external disk drive ports
- all-in-one design

Call For New Pricing!

4 MB RAM, 40 MB HD

Call For New Pricing!

4 MB RAM, 80 MB HD

Apple® Macintosh® IIsi



- 68030 processor, 20 MHz
- 3 MB RAM, 40 MB HD
- Internal Apple SuperDrive
- color & sound capabilities

Monitor and keyboard extra

\$1149.99

AppleCD™ 300



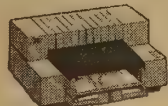
- Operates at twice the speed of ordinary CD-ROM drives
- Twice as fast as the AppleCD™ 150
- Special CD Audio Chip lets you play audio compact discs

Now in Stock!

\$574.99

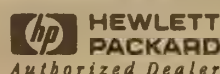
Apple, the Apple logo, LaserWriter, StyleWriter and Macintosh are registered trademarks of Apple Computer, Inc. PowerBook, PowerBook Duo and AppleCD is a trademark of Apple Computer, Inc. Classic is a registered trademark, licensed to Apple Computer, Inc.

HP DeskWriter C Printer



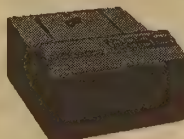
- Quality COLOR printer
- 300 dpi
- 100 sheet paper tray
- Scalable fonts
- Grayscale blacks

\$549.99



HEWLETT
PACKARD
Authorized Dealer

HP LaserJet IIIIP Printer



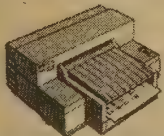
- 300 dpi
- 16 MHz processor
- HP PCL 5 printer language
- 8 Intellifont® scalable typefaces
- 14 bitmapped fonts

HP DeskJet 500C printer



- Affordable laser-quality printing
- Allows 300-dpi COLOR printing on plain paper & transparencies
- Wide variety of built-in fonts

HP DeskWriter 550C Printer



- Check it out!
- Quality plain-paper printing in BLACK & COLOR
- 300 dpi
- 35 scalable typefaces
- Macintosh® System 7™ compatible

\$749.99

NEW

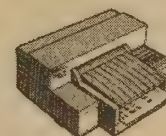
HP LaserJet 4 Printer



Now in Stock!

- 600 dpi print quality at 300 dpi price
- Fast 8 ppm printing
- Full networking capabilities
- Resolution Enhancement technology and microfine toner for superior quality

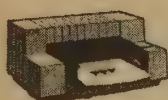
HP DeskJet 550C printer



- 300 dpi, laser-quality BLACK & COLOR printing
- Prints on plain paper, special paper, transparencies, & envelopes
- Convenient color printing w/ two ink cartridges

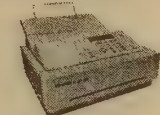
\$749.99

HP DeskJet 500 Printer



- Affordable laser-quality printing
- Wide variety of built-in fonts
- Supports leading software applications

HP LaserJet Fax



- Plain paper eliminates fax curl & fading
- PC-direct faxing technology saves time & money by eliminating paper originals

COMPUTER SELECTION

• Redwood City (415) 368-8828

2001 Middlefield Road
(at Woodside Rd, by Price Club)
M-F 9:00 - 6:00 Sat 12 - 5
Fax: (415) 368-8803

• San Francisco (415) 543-9888

201 Mission Street
(across from PG & E Hdqrs)
M-F 9:00 - 5:30 Sat 10 - 4
Fax: (415) 777-1177

• Sunnyvale (408) 746-2288

1202 Apollo Way
(at Central & Lawrence)
M-F 9:30 - 5:30 Sat 12 - 5
Fax: (408) 746-2208

• Walnut Creek (510) 943-2882

1676 N. California Blvd
(next to Max's Opera Cafe)
M-F 9:00 - 5:30 Sat 12 - 5
Fax: (510) 943-2890

We reserve the right to limited quantities. Not responsible for errors or omissions. Sales price good for one week from date of advertisement.

Libre

Service Computer Inc.

Authorized Bondwell
& Brother Dealer

FREMONT

48860 Millmont Drive, 102C
Fremont, CA 94538
510-438-0402
Fax: 510-438-0489
Tue-Sat 10 am to 6 pm

CAPITOLA

1220 41st Avenue, Unit G
Capitola, CA 95010
408-479-7319
Fax: 408-479-4316
Tue-Sat: 10 am to 6 pm

SAN FRANCISCO

1959 Ocean Avenue
San Francisco, CA 94127
415-584-1122
Fax: 415-584-1123
Tue-Sat 10 am to 6 pm

SAN MATEO

2505 S. El Camino Real
San Mateo, CA 94403
(Cross Street: 25th Ave)
415-578-1614
Fax: 415-578-0268
Tue-Sat: 10 am to 6 pm

SACRAMENTO

5112 Madison Ave.
Sacramento, CA 95841
916-349-8200
Fax: 916-349-8299
Tue-Sat 10 am to 6 pm

**No Down Financing
Available**

VISA & Master Card accepted
•Apply for the Libre-Credit Card•
(with no application fee)

Advertised prices based on 3% cash purchase discount.
Price subject to change without notice.
Check for our everyday low price and other new products.

Multimedia System Kits Special **NEW**

386-40 Mhz 64K Cache; Medium Tower + P/S;
4 MB; IDE 2S, 1P, 1G; 1.2 & 1.44 FDD; 120 MB
HD; SVGA Card 1MB; Sound Commander FX With
Speakers & CD ROM; SVGA
Monitor; 101 KB;

....\$1,499

Upgradable to: 486-33 Mhz 64K Cache.
....\$1,849

NEW SPECIAL Libre 486 Local BUS Systems Kit

486-50Mhz DX 64 K Cache
4 MB; Mini Tower Case; IDE 2S, 1P, 1G; Both
FDD; 120 MB HD; ET4000 Video Card; 15"
SVGA Monitor; 101 KB ; MS Dos
& Windows; Serial Mouse.

...\$2,049

Special

286-12MHz motherboard & CPU	\$55
286-20MHz motherboard & CPU	\$70
386SX-16MHz motherboard & CPU	\$80
386SX-25MHz motherboard & CPU	\$105
386DX-40MHz motherboard 64K & CPU	\$180
486SX-25MHz motherboard 64K & CPU ...	\$215
486DX-33MHz motherboard 64K & CPU ...	\$530
486DX-50MHz motherboard 64K & CPU ...	\$790
IDE CONTROLLER w/ I O	\$15
SVGA card (800 X 600)	\$25
SVGA card (1280 X 1024)	\$55
Mini tower or baby case w/ power supply	\$55
Serial mouse	\$12
2400 baud modem	\$35
2400/9600 S/R Fax modem	\$60
SVGA 1024 X 768, 0.28mm monitor	\$260

Shareware Available

SYSTEM KITS

With: 1MB; IDE HD/FD Controller; 2 serial, 1 parallel and 1 game ports;
1.2M or 1.44 FD, 101 KB, Mini tower or desktop case with power supply.

286-12 MHz	\$240
286-20 MHz	\$260
386SX-25MHz	\$280
486SX-25MHz	\$410
486DX-33MHz	\$710

386DX-40MHz with 128K Cache System Kit

Basic Features: 1 MB standard; IDE HD/FD
Controller; 2 serial, 1 parallel and 1 game ports;
1.2M or 1.44 floppy drive; 101-keyboard;
Mini tower or desktop case
with power supply

\$330

BEST PRICE

NEWS & VIEWS

transfer records. Owners may be related to all parcels they own for unified billing, or because multiple assessor parcels sometimes compose a single "legal" parcel for planning and building purposes. These records, in turn, are related to Planning Department records, zoning records, building inspection records, Health Department records, code-violators' citations, owners' other tax records, etc. Some of this cross-indexing has existed for decades, but only in paper annotations. Now, much of it is computerized, and there's much more of it.

Some of the most valuable public—and private—information is in the *relationships or cross-references between information in government records*.

The cross-references themselves, between public components of public records, should be clearly identified as public information that can be examined and used by citizen researchers. And the concept of "a [public] record" needs to be reviewed in the context of relational database systems.

COPYING A PUBLIC RECORD—OR DATABASE

One can examine a public record, or obtain a copy of it. For instance, the CPRA states, "Any person may receive a copy of any identifiable public record or copy thereof. Upon request, an exact copy shall be provided unless impracticable to do so. Computer data shall be provided in a form determined by the agency." [Cal. Govt. Code §6256]

First of all, computerized information is often *most* useful in computerized form. Agencies should offer computer-readable copies of computerized public records.

Computerized records make it trivially convenient and inexpensive to copy the equivalent of an entire file drawer—or file room—often in minutes; often on media that cost less than a carton of copier paper.

On the other hand, citizens often ask an agency to search or process public records in ways the agency would not normally do. Agencies often have neither staff, expertise, nor equipment to fulfill such customized requests. To resolve this, machine-readable copies of entire files of public records should be equally as available as copies of their individual records—but only in the formats and on the media the agency already uses to make such copies (e.g., for backup).

When agencies have commingled public data with private or confidential data, they must assure their ability to disclose the public data while protecting the private or confidential data.

MORE TO COME; PASS IT ALONG

We will continue reviewing the impacts of computerizing public records—including fair copying costs, privacy considerations, covert cross-references, proprietary software and systems, high-profit monopoly of public records, access for the computer-handicapped, etc.

Pass this along—to your community group, watchdog organization, local public administrator, local or state elected representative, etc. Also pass it along to your local newspaper editor; they should be aware of how computers are impacting *their* access to government records.

AND ONE QUICKIE

In *Hacker Crackdown*, Bruce Sterling devoted eight pages to describing what he called a "truly mind-boggling event"—the First Conference on Computers, Freedom & Privacy (1991). Another mind-bender, the Third CFP, will be held on the San Francisco Peninsula, this March 9–12. Anyone can register, but space is limited. "For a good time, call" Bruce Koball, CFP'93 Chair, 2210 6th St., Berkeley, CA 94710; (510)845-1350, fax (510)845-3946, email cfp93@well.sf.ca.us.■

Jim Warren founded InfoWorld, Wireless Digital, Initiative, Inc., and one of the nation's largest public microcomputer conventions. He was founding host of PBS's Computer Chronicles, founding editor of Dr. Dobbs's Journal, and has chaired various trade and professionals' organizations. He holds graduate degrees in computing (Stanford), medical information science (UC Medical Center), and mathematics & statistics. He has been a computer professional since 1968, and was a mathematics teacher and professor for ten years before that.

He organized and chaired the landmark First Conference on Computers, Freedom & Privacy (1991), sponsored by a dozen nonprofit civic, professional, and industry organizations, and received one of the first Electronic Frontier Foundation Pioneer Awards (1992). He is a member of the board of directors of Autodesk, Inc., and also chairs the Communications Committee of the California Public Records Act Reform Coalition.

IBM • SANYO • LEADING EDGE • DTK • SPERRY • AST • WYSE

ROM BIOS UPGRADES

Solve Your Compatability Problems!

AMI • PHOENIX • MR BIOS • AWARD

8 Years of experience, unmatched in the industry

WE STOCK THE LARGEST VARIETY OF ROM BIOS UPGRADES IN THE WORLD.

We also sell:

- MEMORY UPGRADES
- MOTHERBOARDS-286-486
- BIOS Reference Manuals
- DIAGNOSTIC PRODUCTS

• WE WILL BEAT ANY ROM BIOS COMPETITORS PRICE-CALL US TODAY!

• FREE Catalog • FREE Chip puller • FREE Tech support • Volume Discounts
 • Univ.&Corp. POs Welcome • Same Day Shipping • DEALERS WELCOME - Call for special pricing, free bios resellers kit • Authorized Micronics BIOS Distributor

FEATURES OF A NEW BIOS

- Support, 1.2MB, 1.44MB & 2.88MB floppy drives • Support CD ROM • Faster I/O Speed
- DR DOS Support • Complete setup in ROM • Windows 3.1 support • Novell support • DOS 5.0 Support • IDE drive support • OS/2 support • Support for 47 different hard drives, plus 2 user defined • Virus & password protection • and more !!!

SmartMicro

TECHNOLOGIES, INC.

FAX (805) 371-0012 ORDER (800) ROM-BIOS (800) 766-2467 TEL (805) 371-0055

143 TRIUNFO CANYON ROAD, SUITE 103 • WESTLAKE VILLAGE CALIFORNIA 91361

ACER • SAMSUNG • KAYPRO • COMPUADD • PACKARD BELL

SPECIAL THIS MONTH:

286-12 SYSTEM...\$485

INCLUDES:

1 MB RAM 40MB HDD
 5.25" FDD 101 KEYBRD
 SLIMLINE CASE
 256K VGA CARD
 COLOR VGA MONITOR

SOFTWARE PACKAGE:

MS-DOS 5.0
 WINDOWS 3.1
 MS-WORKS (DOS)
ONLY \$69!

COMPLETE SYSTEMS SALE!

386SX-16....\$619

2MB RAM 40MB HDD
 5.25" FDD 256K VGA
 14" COLOR VGA MTR
 MINITOWER CASE

386DX-25....\$898

4MB RAM 100MB HDD
 DUAL FDD 512K SVGA
 14" SVGA MONITOR
 DESKTOP CASE

386DX33....\$969

486DX-33...\$1398

486DX-50...\$1678

4MB RAM
 100MB HDD
 DUAL FDD
 64K CACHE
 1MB SVGA CARD
 14" SVGA MONITOR
 DESKTOP CASE
 101 KEYBRD, MOUSE

Prices subject to change without notice

LINTEK COMPUTERS

3025 Research Drive, Richmond, CA 94806
 Sales (510) 223-5917 • Fax (510) 223-0221
 Customer Service (510) 223-5476

Uncle Ralph's



Packard Bell
Non-Interlaced
Low Radiation
Super VGA
1024 x 768
\$369

Monitors

Standard Technology
Super VGA, 1024 x 768
Resolution, .39 Dot Pitch
\$249

Touch Super VGA
1024 x 768 Resolution,
.28 Dot Pitch
\$299

MagnaScan 17"
• 1280 x 1024
• Non-Interlace
\$997

Hard Drives

Conner • Maxtor
Western Digital

80MB **\$249**
130 MB **\$269**
213 MB **\$399**



Mice

Microsoft Compatible **\$19.69**
3 Button Mouse
PCA Joystick **\$19.69**
PCA Trackball **\$49.69**
Logitech MouseMan **\$79.69**

Fax/Modems

2400 Baud Modem **\$39.69**
AMS 96/24 Fax/Modem **\$79.69**
AMS Pocket Fax/Modem **\$117.69**
9600 Baud Modem/2400 Baud Fax
Big Mouth Voice Mail **\$177.69**
Put your old PC to work.
US Robotics Fax/Modem **\$299.69**
9600 Baud - Internal
Supra 14.4 Data/Fax Modem .. **\$347.69**
Internal

About Uncle Ralph's Computers...

All of our computers include a written money back satisfaction guarantee. Except for special ordered parts, there are no restocking fees.

All of our systems are FCC Certified so you won't have to worry about interfering with your neighbor's reception.

All software includes manuals and can be registered for manufacturer's support.

Our 386 and 486 systems include a sharp .28 dot pitch SVGA monitor. Less expensive monitors are available.

All systems include keyboard, two serial, parallel and game ports.

Systems are usually available for immediate delivery.

There is no extra charge for credit card purchases.

If one of our computers needs service and we can't have it ready the same day, we'll give you a loaner (unless you bring it in really late in the day).

Good Questions to Ask Before You Buy a Computer...

- Is the system FCC B Certified so you don't have to worry about interfering with your neighbors TV and radio reception?
- How long will you have to wait if your computer needs service? Will you have to wait for parts?
- Is the system you want to purchase available immediately or will you have to wait for it to be assembled?
- If a deposit is required, is it refundable?
- Is the store's satisfaction and refund policy in writing? Is there a restocking fee?
- Are you getting legal copies of DOS and Windows, or is there an extra charge for manuals?
- Is there an extra charge for features which most stores include free?
- Is there an extra charge for credit card purchases?

MAGNAVOX 20" MagnaScan Monitor

- 20" Black Matrix Screen
- 0.31 Dot Pitch
- 1280 x 1024 Non-Interlaced
- Supports VGA, SVGA, VESA, 8514A, XGA, & Mac II

Enjoy all the advantages of a large screen monitor.

Our
Biggest
Color
Monitor

\$1497
\$75 Month

PACKARD BELL
America grew up listening to us. It still does.

486-SX Legend 605

- 85MB Hard Drive
- 2MB RAM
- VGA Color Monitor
- MS DOS 5
- Windows 3.1

...plus Prodigy Start-Up Kit,
MS Works for Windows, MS
Money & Entertainment Pack.

Not affiliated with any other Bell System entity. The Intel Inside logo is a trademark of Intel Corp.

One Year
On-Site Warranty

\$1197
\$60 Month



IBM 486 PS/1

486-SX25

170MB Hard Drive
4MB RAM

- Super VGA Color Monitor
 - Modem • Mouse
 - Windows 3.1
 - DOS 5.0 • Prodigy
- Plus: Works for Windows,
Quicken for Windows,
Virus Check and More!



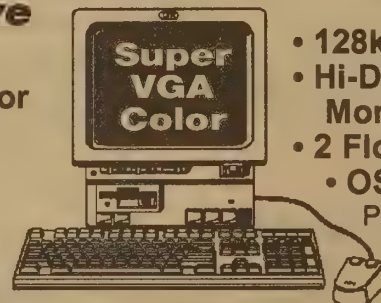
\$1797 \$90 Month



IBM 486-33 with OS/2

211MB Hard Drive
8MB RAM

- 128k Static RAM Cache
 - Hi-Definition Super VGA Monitor
 - 2 Floppy Drives • Modem
 - OS/2 Operating System
- Plus: Works for Windows,
Quicken for Windows,
Virus Check and More!



Available
Today

\$2197 \$110 Month

Super 486 Systems at Super Savings

Our Most Popular 486

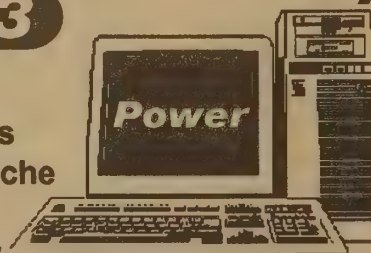
486-33

- 170 MB Hard Drive
- 4MB RAM • AMI Bios
- 256k Static RAM Cache
- Hi-Definition Super .28dp VGA Monitor

- 2 Floppy Drives • 1MB Video Card
- 33Mhz Designed to Upgrade to 66Mhz
- MS Windows 3.1 • DOS 5.0

\$1897 \$90 Month

Available
Today



Windows Accelerator System

486-50

- 213 MB Hard Drive
- 8MB RAM
- 256k Static RAM Cache
- 2 Floppy Drives

- Non-Interlaced Super VGA Monitor
- Paradise 1 MB VGA Accelerator Card Plus...MS Windows 3.1 & DOS 5.0

\$2497 \$125 Month

Available
Today

Includes Uncle Ralph's
Lifetime Labor Warranty

Call to confirm pricing due to fluctuating CPU and RAM costs.

Consistently Low Prices...Staffed by True Afficionados"

Susan Stefanac
S.F. Focus Jan. '93

1992
BEST OF THE
WEST-BAY

Uncle Ralph's
10 Years of Excellence

TDK
Box of 10

- MF 2DD... \$5.99
- MF 2HD... \$9.99
- M 2HD... \$7.99

0% Financing
Up to \$2500

You can defer payment for 90 days and pay no interest at all. Or you can charge it to your Uncle Ralph's credit card account. Sometimes we even take cash! Credit subject to lender approval.

Same Day Repair Service, 7 Days a Week!

If you have a problem with one of our computers we can usually have it fixed while you wait. We have an excellent technical support staff that's dedicated to keeping you happy.

Lowest Prices... Guaranteed!

When you buy at Uncle Ralph's, you get our lowest price guarantee. If you find it for less at another local dealer we'll match that price, now or up to 30 days after you buy! We'll even give you an extra 10% of the difference for your trouble.

SUPER NOTEBOOKS!

MITAC 386-SL20 Notebook

- 80 MB Hard Drive
- 2 MB RAM • VGA Screen

\$1497 \$60 Month

Sharp 386-SL25

- 80 MB Hard Drive
- 4 MB RAM
- 10" Triple Supertwist VGA Display
- Built-In Trackball
- ...Plus PCMCIA Slot Compatibility, 126k Cache and up to 3 hours battery life. The RAM is upgradeable to 8MB and it weighs only 4.9 lbs.

\$1797 \$90 Month

IBM 386 Notebook

- 85 MB Hard Drive
- 2 MB RAM (10MB max.)
- 10" VGA Screen • Trackball
- Internal Fax/Modem plus... Windows 3.1, DOS 5 and WinFax software. \$100 Month

Twinhead SlimNote 486-33

- 4 MB Expandable RAM
 - 130 MB Hard Drive
 - VGA Screen
- \$2597** \$130 Month

Avanti 486 Notebook

- 120 MB Hard Drive
- 4 MB RAM
- 6 Hour Battery Life
- Fax Modem • WinFax
- Windows and the best screen and keyboard

\$2497 \$145 Month

Color 386 SX-25

- 120 MB Hard Drive
- 4 MB RAM
- 9.5" Color Screen with 16 to 256 colors

\$2597 \$130 Month

PRINTERS

Panasonic Office Automation 24 Pin Letter Quality Printer

Proven workhorse prints up to 240 CPS with beautiful text & graphic. 5 built-in fonts and 2 Year Warranty. **\$227** KXT 1123

Panasonic Near Letter Quality Our most popular printer **\$168** KXT1180

brother Portable Ink Jet Printer

Perfect Laptop Accessory **\$297**

Royal Inkjet Printer

The Best Print We've Seen **\$397**

OKIDATA Desktop LED Printer

This laser quality 300 dpi printer has crisp blacks and publication quality output. HP Series II compatible, with standard typefaces/fonts and a slim, low-profile design. \$31 Month **\$627**

OKIDATA Postscript LED Page Printer

Postscript printing for high quality output. Adobe postscript and HP emulations, 8 ppm for high productivity plus dual, 200 sheet paper tray. 2MB to 4MB of memory for full page graphics. Optional Appletalk/Serial Interface. **\$1397** \$70 Month

FAX MACHINES

BellSouth Products FAX Phone Machine

Halftones for excellent photographic transmission; plus fax/phone switch

\$279⁶⁹ Financing Available

brother FAX/Phone

Fax machine, phone combo complete with paper cutter, 10 page document feeder/memory, automatic FAX/phone switching and grey scale for halftones. Plus, Brother's exclusive Anti-Curl system.

\$379⁶⁹ Financing Available

Panasonic Integrated Fax/Answering System

Integrated fax/answering machine system with automatic phone/fax switching. Full remote control answering machine with digital chip OGM. Fax section includes 10 page document feeder. **\$389⁶⁹** Panasonic

Panasonic Fax/Answer System

Automatic fax/phone switching. Send features include 10 page document feeder, halftones and sequential broadcasting. Answer machine features are Panasonic's finest **\$499⁶⁹** \$25 Month

2569 Telegraph Ave. Berkeley
5 blocks south of U.C.
(510) 841-5280
FAX NUMBER: 841-4743
Open 7 days: Mon.-Sat. 10:30-7, Sun 12-5
Items limited to stock on-hand & subject to prior sale.
Ad expires 2-16-93. © Uncle Ralph's, 1993

Uncle Ralph's
Your Uncle in the Business!

Uncle Ralph's Credit

- Low Monthly Payments
- Approval Usually within Minutes

Subject to lender approval. Monthly payments subject to interest surcharge. Minimum monthly payment per account is \$20. Down payment may be required. Interest payments based on 24 months O.A.C. Based on 21% A.P.R.

The Newest Wizard

Sharp's OZ-9600 Includes Touchscreen, Pen Input

BY MITSU
HADEISHI

One of the hottest palmtop organizers on the market is the Sharp Wizard series, which covers a large product line ranging from machines like the \$130-list ZQ-2400 on up. I myself own an OZ-8000 series Wizard, which I find to be extremely useful and well designed, so I was quite interested to hear about the new OZ-9600, which includes a number of feature enhancements including a graphical user interface and pen input.

The OZ-9600 lists for \$649, comes with 256K of RAM, one card slot, a touch-screen panel with a resolution of 320 x 240 dots, a new infrared communications port, all of the standard Wizard organizer functions including memo pad, scheduler, outline processor, phonebook, calculator, terminal, world clock, as well as some new functions. The unit measures 7 1/8" x 4 1/8" x 1", which makes it roughly the same width and depth as the OZ-8000 series, with the addition of around half an inch in height. The most interesting addition is support for pen input, which works with a pen-like plastic stylus, which is supplied with the machine and stores neatly in a clip above the keyboard when the machine is closed.

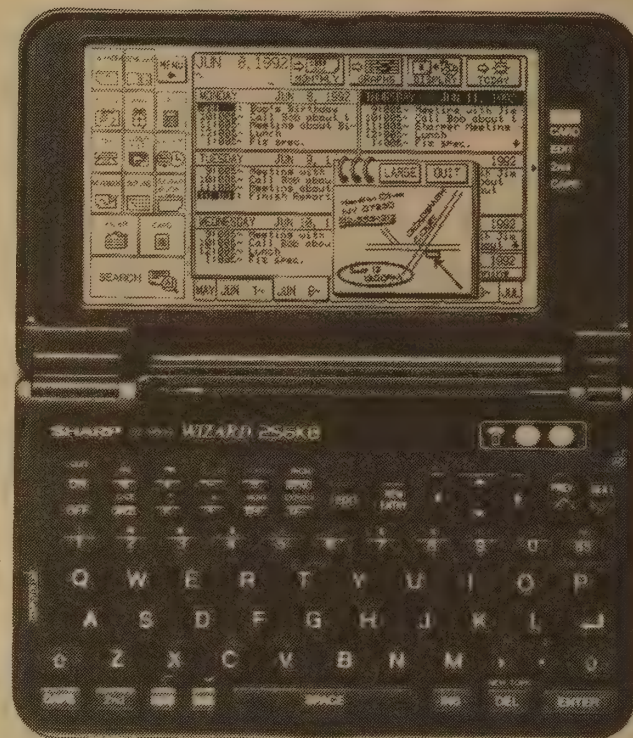
This is the largest Sharp Wizard ever built, which makes it a bit less portable than its predecessors, but still small enough to fit in a jacket pocket. The extra size, however, allows the keyboard to be quite large, and it is just spacious enough to allow touch-typing. The display acts as a kind of extra keyboard; the function keys in earlier Wizards have now been replaced by an area of the touch screen which has the functions printed permanently beneath it. In addition, other buttons and functions on the display can now be accessed using the touch screen. The card slot is no longer visible; any card plugged into the slot will have its buttons displayed on the touch screen rather than through a transparent panel, as was the case with previous Wizards. This gives the OZ-9600 much more screen space without sacrificing card functionality.

The stylus provided is simply a piece of solid black plastic; it is not a special elec-

tronic device (you can, in fact, use your finger to "push buttons" on the touch screen).

There are a number of problems with the pen interface, however, which can be confusing to someone just starting out with the machine. In particular, the interface is highly "modal," which means you have to make sure you're in the right "mode" before your input will be recognized. Modern user interfaces (such as that offered on the Psion 3, or on desktop machines like the Windows or Mac interfaces) tend to be non-modal—you are usually allowed to use any option whenever it makes sense for you to do so. Because of the "modal" nature of the OZ-9600's interface, you can often get stuck in situations where the unit will not let you do what you want to do until you figure out how to get out of the mode you're in; this can be frustrating and is an unfortunate design flaw which Sharp would do well to address in future versions.

The pen-input capabilities of the OZ-9600 are limited; it does not do handwriting recognition; you use the pen either for selecting options or for jotting down handwritten notes or making drawings (sketches, maps, doodles, and the like). If you jot down a note into the OZ-9600 using the pen, it does not convert it automatically into text, the way the Newton will; it simply stores it as graphics, which takes more memory. Also, you can only draw into one application: the "scrapbook." This is by no means a "pencentric" device; the pen is really used as an adjunct to the keyboard, and cannot be used as a replacement for it (in the



Sharp's OZ-9600 features a larger keyboard, pen input, and an infrared communications port.

case of the Newton you often have no keyboard whatsoever, just a stylus). However, this added capability does add to the flexibility and usefulness of the machine.

Unfortunately, there are a number of drawbacks to the 9600 which vary in importance depending on your particular application. For me, the worst problem is that the processor is too slow to keep up with fast typing. This is ironic, since the keyboard is finally large enough to enable you to type at a rapid clip, but the machine can't keep up; it will lose characters if you type too fast. Thus the machine is really not too useful as a note-taking device (for me, at least), which is what I often use my OZ-8000 series for. However, many people don't type all that quickly, and though the keyboard is large for a palmtop, it is still smaller than a standard keyboard; you may not be able to out-type the machine even if you can touch-type on a full-sized keyboard.

Another problem is the screen is somewhat dim compared to the other Wizards;

"A Touch for the Future"

ACR has been helping customers like you since 1981 select a custom configured system designed to fit your needs composed of the newest & finest technology. For 12 years we have been selling to successful customers such as Intel, IBM, AMD, NOVA Systems, HP, Pamapacific, John Hawkins, Lockheed, Stanford, NASA, Pac-Tel, Japan and much more! Join the Success and let us serve you!

Why should you buy from ACR?

- ◆ Lowest prices for the highest quality product.
- ◆ 2 Yrs. parts, 5 yrs labor on the Elite 6 Layer Motherboard.
- ◆ Same day service for repairs (in most cases).
- ◆ System supports DOS (others do not), UNIX, XENIX, Windows NT.

Confused with what to buy? "FREE" Consultation Just Call!



486/33/64K

\$1260

(Call for EISA)

486/50/64K

\$1570

(Call for EISA)

386/40/64K

\$1089

386/33/64K

\$1089

486/20SX

\$1149

SPECIAL DEAL

SYSTEM CONFIGURATION

- ◆ Add \$50 for 256K Cache
- ◆ 4 MB RAM (Add \$120 per 4 MB)
- ◆ 3.5" and 5.25" Teac Floppies
- ◆ 120 MB Hard Drive (add \$130 for 212 MB)
- ◆ 2H/2F IDE Control Card
- ◆ 1 Par/2 Ser/1 Game Ports
- ◆ 14" SVGA Monitor
- ◆ 1 MB SVGA Card
- ◆ 101 Enhanced Keyboard
- ◆ Case & Power Supply

WE WILL MATCH OR BEAT ANY WRITTEN QUOTE PRICE!

OPERATING SYSTEM & MICE

MS DOS 5.0	\$40	3 Button	\$17
Windows 3.1	45	Logitech First	38
OS/2 2.0	135	Kensington Exp	95
(SCO, PROXIMA, ESIX, SUNSOFT)		Logitech Mouseman	65
		MS Ser/Bus	65/85

HARD DRIVES & CONTROLLERS

(IDE) Quantum 170MB	\$380
(IDE) Max 80MB/17ms	238
(IDE) NEC 100MB/17ms	268
(IDE) Max 130MB/15ms	298
(IDE) Max 210MB/15ms	448
(IDE) Max 340MB/15ms	748
(SCSI) Max 130MB/15ms	310
(SCSI) Quantum 240MB/9ms	630
(SCSI) Fujitsu 330MB/12ms	780
(SCSI) Fujitsu 520MB/12ms	970
(SCSI) Max 670MB/16ms	1218
(SCSI) Max 1.2GB/13ms	1580
(IDE) Kowell 4F/2H	30
Ultrastor IDE Cache	159
(SCSI) Future Domaine	59
Adaptec 1522V/1542B w/Kit	119/259
DPT 4MB Memory	CALL

MONITOR & VIDEO UPGRADE

ViewSonic 4E/6/5+	\$70/139/310
Sony 1304S/1604S	350/739
NEC 3FG/4FG	439/539
Nanao 9080i/F550i	739/839
ViewSonic 7/8	839/1239
NEC 5FG/6FG	1120/2675
Sony 1936	2239
Orchid Pro II w/HS	75/85
Diamond Speed Star w/HS	89/99
Orchid Fahrenheit 1280 D	160/190
Diamond Stealth/Speedstar 24X	160/130
ATI Vantage/Ultra (w/Mouse)	180/240
Sampo AlphaScan 14"	180

MODEMS

2400 Baud	\$32
9600/2400 FAX	56
Intel Satis 96/14.4 FAX	CALL
US Robot 96/14.4 FAX	CALL

KEYBOARDS

ST 101 Keyboard	\$25
MaxiSw/Keytronic	30/36
Focus 2001/5001	40/68
Omni 101/102/Ultra	68/68/98

SOUND CARDS

ATI Sound Pro	\$148
Sound Blaster/Pro	90/160
Adlib Pro 16	230

PRINTERS

Panasonic 1124	\$280
Epson LQ 570	270
Panasonic 1624	335
HP 500, 500C	CALL
HP IIP+	CALL
HP IIP, III	CALL
HP IV	CALL

CD ROM/TAPE BACK-UP

Sony 535/541	\$CALL
NEC 74/84	CALL
Color 120/250	186/236
Archiv 250(2153)	469

ACR
SYSTEMS

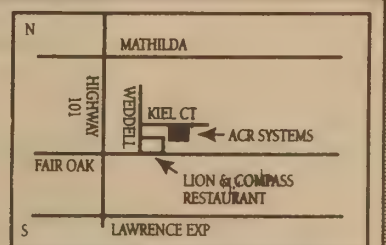
1038 Kiel Ct.
Sunnyvale, CA 94089

(408) 734-9795
Fax: (408) 734-9798



Mon-Fri 9am-6pm
Saturday 10am-5pm

Prices subject to change without notice.



部品保証期間 1年間 (ハードディスク等の特定部品では、メーカーから5年間の保証期間が提供されているものがあります。それはそのまま当社から皆様に提供する保証期間となります。)

人件費保証期間 5年間 (電話、FAXによる、技術サポートも含まれます。)

日本へは空輸業者と専属契約を結んでおり、輸送時の保険も含め165ドルでシステム一式 (本体、モニター、資料等) を発送しております。 (尚、東京、大阪、等の最寄りの空港から最終目的地までの輸送費は、この金額には含まれておりません。)

当社は、ここシリコンバレーにて、10年にわたるPCC関係の販売実績を持っており、その顧客にはIntel、SCO、等の優良企業が多数あり、MS-DOSをはじめNETWARE、OS/2、UNIX等、各種ソフトウェアの経験も豊富であります。私どもは日本の皆様に対して、ほとんどのクレジットカードをお取り扱いしております。その距離的なことを考え合わせ、責任の持てる高品質な製品しか販売しておりません。しかし、万一一部品保証期間中に故障が発生した場合、その部品を送り返して頂ければ、米國からの返送料は当社にて負担致します。

this is probably due to its large size, and the need to conserve power; it may also be due to cost considerations. Also, there are the user-interface problems noted above, which are annoyances rather than major problems; however, they can reduce the functionality of the unit. After all, when you're on the road, you want to be able to quickly look something up or type something in; having to deal with user-interface problems while you're trying to jot down a note or recall some information quickly can be a problem, at least until you learn your way around the machine's idiosyncrasies.

As for functionality, this machine has everything that previous Wizards had and more: The calendar-scheduler in which you can put appointments and other events and view them by month, week, day, or by individual appointment works much like previous Wizards, though with added graphical user interface functionality. The To Do list and the Anniversary function operate much like versions on previous Wizards, though with a nicer-looking user interface. The Calculator is implemented very conveniently as a pop-up application; when you're done with it, you can go back to what you were doing before. The clock and world-time function pop up in a similar fashion. The memo pad (now called "Notebook") and outline processor are implemented much as they were in previous Wizards, except that you now must title each memo entry. (This can be a bit of a bother, since you have to remember to hit the down-arrow key after entering the title, not the enter key, as was the case with previous Wizards. The same goes for all other titled entries. If you hit the enter key, it will store your memo with no text.)

A new function, called the scrapbook, allows you to enter drawings and graphics. However, there is unfortunately no way to mix text and graphics in, say, a notebook entry; you either have all graphics (stored in the scrapbook) or all text (stored in the notebook). You can group text with graphics in a "folder," though this is not as convenient as it would be to mix text and graphics in one entry. You can also paste text into a scrapbook page (but it is stored as graphics, not text). If you try to paste a picture into a text notebook page, you get the text "<PICTURE>," not the actual drawing. It's not exactly the Mac or Windows.

A handy new feature is the Filer, which allows you to group any number of individual items together in a "folder," which is a way to quickly index a number of items located in different parts of the organizer. For example, you can drop a notepad note, a scrapbook picture, an address book entry, and a scheduler entry into a single "folder," and

have quick access to any of the related entries at once. This could be a useful feature for creating compound documents. Entries may be a member of more than one folder at once.

An interesting addition to the machine is an infrared interface port, much like the one on the HP 95LX. This allows you to communicate with another 9600 without any additional hardware; you can also buy other special wireless peripherals for the unit. For example, you can get a wireless interface that allows you to upload and download information to and from your PC without having to connect a cable. You can even purchase a wireless printer interface, which allows you to print directly from your organizer via the infrared port.

The user interface problems, however, can be annoying. These can be confusing at times especially to the novice user, despite, or in some cases because of, the new pen interface. This can be alleviated by practice and use of the machine, but it takes some time. For example, the function buttons on the left hand side of the screen often do not work if you're not in the correct "mode." In the scrapbook, for example, you might be in the middle of drawing something, then decide you want to look at the notebook; if you try to change to another function, however, nothing happens. You have to first store or cancel the drawing before the OZ-9600 will let you change to the notebook. The scrapbook seems to have the most problems switching to another application, perhaps because it is the newest function in the 9600.

Other user-interface problems: It is difficult to quickly search for an item by substring. On the OZ-8000 series, you can quickly find any item in a particular function that contained a substring by just selecting the function, typing the string, and hitting "shift-search"; to do the same thing on the OZ-9600, you have to bring up the "search" function, backspace over the previous search string, then type in the string you want to search for. This makes it a bit more difficult to search for new items. Sharp should have eliminated these minor problems before releasing the product commercially; we hope Sharp will address these problems and update the firmware in a future version of the OZ-9600.

Overall, the OZ-9600 can be a useful machine, and if you can get used to the various glitches and problems, it has much to offer: more memory, pen input, a better keyboard, wireless connectivity. It suffers, however, from a slow processor (it should really have at least twice the processor speed), awkward user interface, and other minor hassles, as discussed above. It is, however, one of the cheapest machines currently available which has pen input of any kind, and thus is one of

the first palmtops in this country to break the \$1000 barrier with a pen-based technology of any kind. If you're willing to sidestep the user-interface problems and annoyances, and don't mind the inability of the unit to accept rapid keyboard input, then you might want to seriously consider this unit. However, Sharp has created an opening for the competition by releasing an uncharacteristically flawed unit, and while there are currently no competing machines that quite fill the market niche of the OZ-9600, this situation may change soon. Watch this space for updates.

OTHER PALMTOP AND PEN NEWS

Franklin Electronic Publishers, Inc., creators of the Franklin Digital Book System-1 reviewed in last month's issue, have announced an agreement with IDD Information Services to publish their Tradeline stock performance database as a digital book. The Digital Book System-1 is a very small palmtop unit whose sole purpose is to serve as a "reader" for Digital Books, ROM cards with programs and information stored on them.

Tradeline will be publishing the information as an independent publisher using Franklin's developer's kit for the DBS-1. The Tradeline pocket stock guide gives consumers the ability to access performance information on securities. The book will include financial information for over six thousand NYSE, AMEX, and NASDAQ issues, and will include graphics and charts. Updates to this information will be published on a subscription basis.

ABC Computers has announced a \$1250, 2.2lb. sub-subnotebook computer called the BICOM B260i which is only slightly larger than the Sharp PC-3000 palmtop reviewed a few months ago, but has a full 60MB hard disk drive and a 640 x 400 resolution LCD screen capable of displaying Microsoft Windows graphics. The unit supports CGA and AT&T graphics mode, and includes Windows support. It is powered by five AA size batteries, though this only gives it four hours of continuous operation. More on this unit in a future column.

Slate Corporation, a pen-based software company, has begun shipping its PenApps Application Builder v1.0 for Windows for Pens. A PenPoint version should be available first quarter of 1993. PenApps is a visual development tool that allows developers to create forms-based applications. PenApps includes a forms designer, a database module, and the Slate PenBasic programming language. Applications built using PenApps are portable between Windows for Pens, PenPoint, and potentially other pen-based operating environments as they become supported. ■

RESOURCES:

BICOM B260i
ABC Computer Corporation
2531 237th St., Ste. 122
Torrance, CA 90505
(310)325-4005

Sharp Wizard OZ-9600
Sharp Corporation
Sharp Plaza
Mahwah, NJ
07430-2135
1-800-321-8877

Slate PenApps
Slate Corporation
15035 North 73rd St.
Scottsdale, AZ 85260
(602)443-7322

Tradeline Digital Book for the Franklin DBS-1
Franklin Electronic Publishers Inc.
122 Burrs Rd.
Mount Holly, NJ 08060
(609)261-4800

Selcor
DIRECT
1800 S. TARPAC, Suite 302
San Mateo, CA 94403
(800) 777-7058
(415) 578-1165 FAX

**There's An
EXP Dealer
Near You!**

**GreyStone
Technology**
30A Knowles Dr.
Los Gatos, CA 95030
(408) 866-4739

BCSA Computers
8A Commercial Blvd.
Novato, CA 94949
(415) 883-7392

Micromatics
3442 De La Cruz Blvd.
Santa Clara, CA 95054
(408) 970-8566

**Dealer
Incentive
Program
Available
for
Qualified
Resellers!**

If you are a reseller
looking to enhance
your product line,
take advantage of
Selcor Direct's value
added reseller
program including
regional advertising
and technical sup-
port and favorable

Toll Free!
800
777-7058
Dealer Info!

Selcor Direct's PRODUCT SPOTLIGHT!

EXP

Selcor Direct's Monthly Spotlight to the Best Values in Silicon Valley!

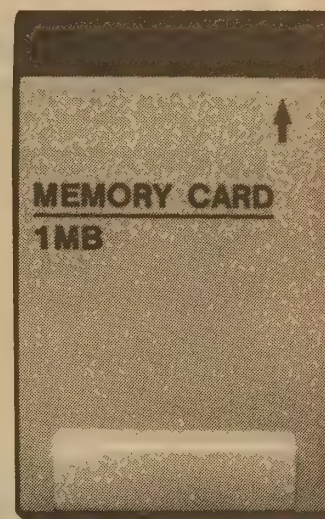
**Need More MEMORY for Your Notebook?
EXP Offers the Best Value, Affordably Priced,
Solution Available Today.**

EXP and Selcor WILL NOT BE
UNDERSOLD! MEMORY MODULES
FOR ALL NOTEBOOKS & LAPTOPS.
1 TO 16 MB MEMORY CARDS
AVAILABLE NOW FOR ALL BRANDS!

Prices as low as

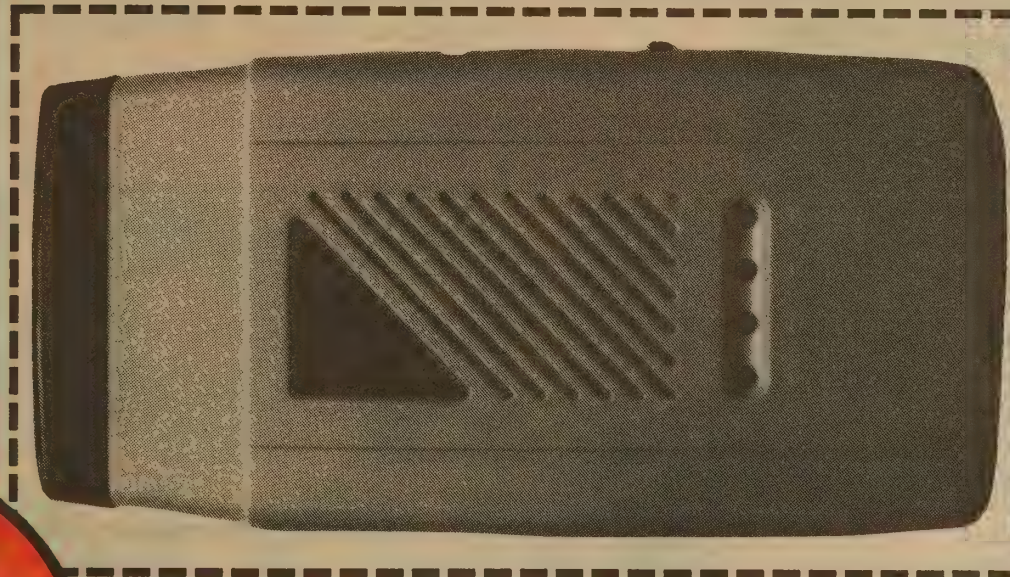
\$39

TOSHIBA • AST • COMPAQ
HEWLETT PACKARD
APPLE • MOST CLONES...



**Try Cutting This Picture Out and
Placing It In Your Pocket.**

(Modem shown at actual small size.)



Nu Laser

This tiny pocket size fax/modem is a high performance send and receive fax with full duplex 2400bps modem. As a result of comprehensive research and engineering, it will support most of today's popular communications software.

Package includes:

- BitCom Fax & Data Software
- Auto-dial, auto-answer, auto-speed selection
- Built-in speaker with volume control
- Four phone number memory ea. up to 33 characters
- LOW POWER CONSUMPTION
- 9600/7200/4800/2400bps synchronous communication
- Receiving and sending a fax in the background
- One step convert and send
- FCC Class B approved

\$119

Selcor Direct

"We're Looking For a Few Good Dealers"

(800) 777-7058

Apple Macintosh

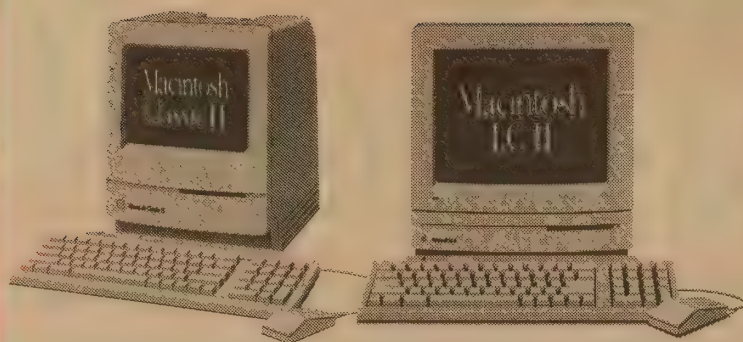
We Accept
Apple®
Credit Card

SAN FRANCISCO
415
956
8696

MOUNTAIN VIEW
415
962
0696

PLEASANT HILL
510
682
8696

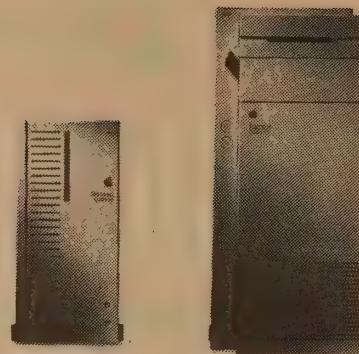
MILPITAS
408
262
1200



Macintosh Classic® II
4/40 **\$949.99**
4/80 **\$1064.99**

Apple Macintosh LC II
4/40 **\$1099.99**
4/80 **\$1289.99**

Apple Macintosh Quadra 700/950
Excellent platforms for
business & technical professionals
starting from **\$3499.99**
starting from **\$5399.99**



Window

Macintosh PowerBook®

PowerBook 145
4/40 **\$1949.99**
4/80 **\$2329.99**

Other

PowerBook 160
4/40 **\$2199.99**
4/80 **\$2549.99**

Other

PowerBook 180
4/80 **CALL**
4/120 **CALL**

File

Printer

Tektronix
Phaser 200e/i starting **\$3499.99**
Phaser IIIPXi Plain paper Color Printer 12x18"
Phaser IISD Dye Sublimation color printer

Apple StyleWriter **\$309.99**
Apple StyleWriter II **\$339.99**

LaserWriter Pro 630 **\$2429.99**
LaserWriter Pro 600 **\$1799.99**

Hewlett Packard
DeskWriter 550C **\$739.99**
LaserJet 4M **\$1944.99**

Print **⌘5**

View

Monitor

Apple Macintosh 15"
Portrait monitor (shown) **\$779.99**

Apple Macintosh 14"
Color Display **\$559.00**

Apple Macintosh 16"
Color Display **\$1299.99**

Apple CD-300 **\$579.99**

Sony GDM 1936 **\$2199.99**

Pinnacle PMO 650 **\$2769.99**

Show all **⌘4**

Apple Macintosh Duo

Duo 210
4/80 **\$2149.99**

Duo 230
4/80 **\$2449.99**

Duo 230
4/120 **\$2799.99**



Authorized Dealer



Apple Macintosh IISi
3 MB RAM/ 40 MB HD **\$1149.99**
5 MB RAM/80 MB HD **\$1349.99**

Apple Macintosh IICi
5 MB RAM/0 HD **\$1874.99**
5 MB/80 MB HD **\$1999.99**
5 MB/230 MB HD **\$2349.99**



We have the Macintosh Duo 230,
DuoDock in Stock!

CALL

PRICES REFLECT A CASH DISCOUNT
Limited quantity. Prices subject to change without notice.
Not responsible for typographical errors.
Apple, the Apple logo, Macintosh, Classic, Stylewriter
are registered trademarks of Apple Computer, Inc.
PowerBook, Macintosh Quadra, and PowerBook Duo
are trademarks of Apple Computers.

Computown



IBM® PS/VALUE POINT™ SYSTEMS

IBM PS/VP 486 DX2

- 80486 DX2 processor
- 33/66 MHz clock speed
- 8 MB RAM exp. to 32 MB
- 1.44 MB disk drive
- Includes internal i487™ math coprocessor
- 212 MB hard drive

IBM PS/VP 486 DX

- 80486 DX processor
- 33 MHz clock speed
- 8 MB RAM expandable to 32 MB
- 1.44 MB disk drive
- SVGA controller built in
- 212 MB hard drive

IBM PS/VP 386 SLC™

- 386 SLC processor
- 25 MHz clock speed
- 2 MB RAM exp. to 16 MB
- 1.44 MB disk drive
- SVGA controller built in
- 80 MB hard drive

CALL
FOR LATEST
PRICING



IBM® THINK PAD 700C, 700 & 300

IBM THINK PAD 700C

- 80/120 MB hard drive
- 80486 SLC microprocessor at 25 MHz
- 4 MB RAM
- Color TFT LCD, 16 bit VGA screen
- DOS® 5.0 (including Windows™ 3.1 support)

IBM THINK PAD 700

- 80/120 MB hard drive
- 80486 SLC microprocessor at 25 MHz
- 4 MB RAM
- STN LCD, 16 bit VGA screen
- DOS® 5.0 (including Windows™ 3.1 support)

IBM THINK PAD 300

- 80/120 MB hard drive
- 80486 SL microprocessor at 25 MHz
- 4 MB RAM
- 64KB memory cache
- DOS® 5.0 (including Windows™ 3.1 support)

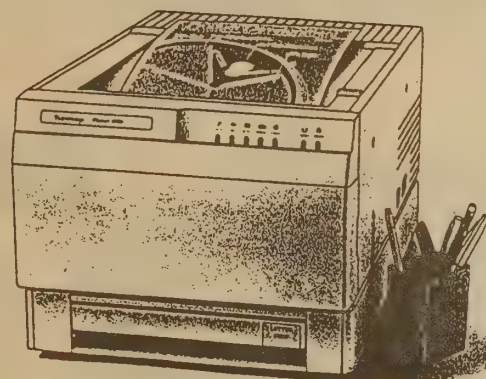
700C IN STOCK
CALL NOW!



IBM Notebooks
and Desktops

Mountain View
location only

IT'S JUST LIKE
A LASERJET®,
ONLY WITH
16,699,999
MORE
COLORS.



Ordinary laser printers are easy, networkable and compatible with most business software. Big deal. But if you had a Tektronix Phaser 200 color printer you'd also have 16.7 million brilliant colors (the best color in the business), Adobe PostScript Level 2, Pantone® color matching, a printing speed of two pages per minute, high materials capacity (deep breath), flexibility to print on laser printer or transparencies (you select the medium you want at your computer keyboard), and a very reasonable price tag of \$3499.99. Want a free demo? All you have to do is call. There's the phone right over there.



Tektronix
Color Printers



415
956
8696

MOUNTAIN VIEW

415
962
8696

PLACENTIA

510
682
8696

REDWOOD CITY

408
262
1200

FOR IN HOUSE/ ON SITE WARRANTY REPAIRS
AND SERVICE, Call us at 415 394 8888 ext. 224

Products serviced: AST(Computers, notebooks, monitors)
COMPAQ (Computers, notebooks, monitors) HP (printers)
NEC (laptops), MACINTOSH(Computers, PowerBooks, Printers)

Phaser is a trademark of Tektronix, Inc.
PostScript is a trademark of Adobe Systems Inc.
All other marks are trademarks or registered trademarks
of the products with which the marks are associated.

Computown

AST®



PowerExec® 3/25 SL MODEL 63 SPECIAL SALE



60MB HD
\$1995

AST PowerExec 3/25SL

- Intel® 386SL processor
- 25 MHz clock speed
- 4 MB of high performance RAM

• 60,80,120 or

160 MB hard disk drive

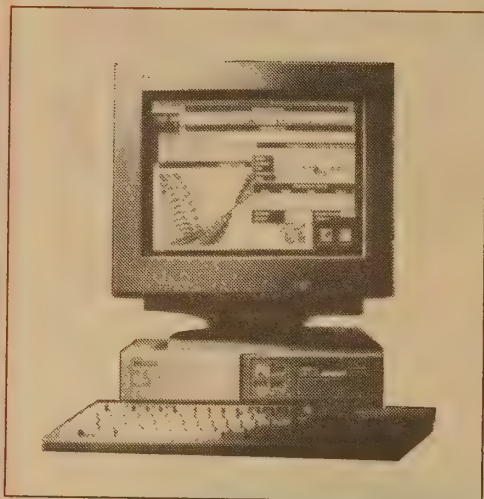
• One serial, one parallel port

• MS-DOS® 5.0 from AST

AST PowerExec 3/25 SLC

- Intel® 386 SL, 25 MHz processor
- 4 MB of high performance RAM
- 60, 80 120 or 160 MB hard drive
- MS-DOS® 5.0
- 9.5" matrix display

CALL

Hewlett Packard
VECTRA

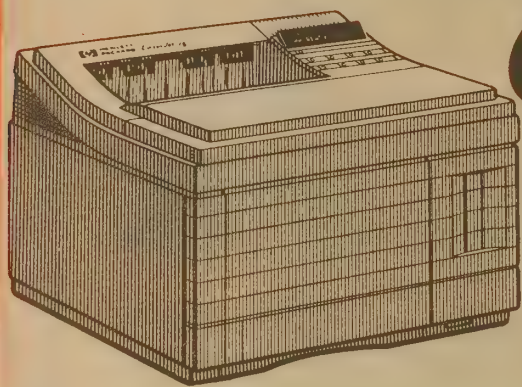
HP Vectra. PCS THAT DELIVER!

High performance for intense office applications and graphical environments. Multivendor compatibility and 'plug and play' connectivity. Ergonomic design for comfortable computing

- HP VECTRA 486/66ST
- HP VECTRA 486/66U
- HP VECTRA 486/33ST
- HP VECTRA/66N
- HP VECTRA 486/50N

hp HEWLETT
PACKARD
Authorized Dealer

CALL

Hewlett Packard
LaserJet 4/4M

600 DPI PRINTER AT A 300 DPI PRICE.

\$1395

LaserJet 4^m

FOR MAC/PC ENVIRONMENT

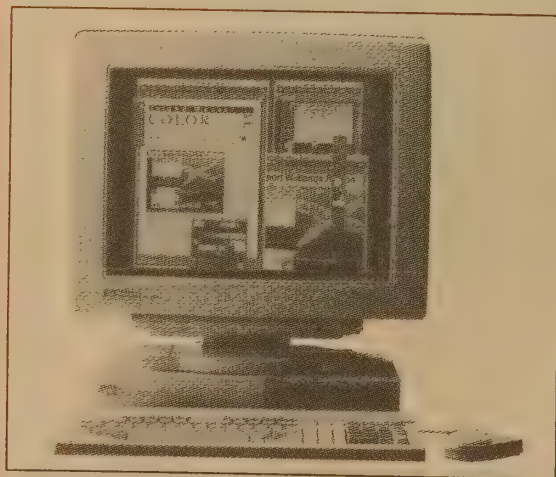
\$1944.99

LaserJet 4
FOR PC/WINDOWS USERS

HP LASERJET 4/4M PRINTER

The HP LaserJet 4 printer is the next generation HP LaserJet that provides superior output quality at a breakthrough price.

- Resolution Enhancement technology and microfine toner for superior output quality
- Fast 8 ppm printing for complex document
- 2 MB memory standard (6 MB on LJ 4M)

Hewlett Packard
WORKSTATION

FEEL THE POWER

HP Apollo Series 700 Model 710 Workstation

Come experience for yourself the power of the Hewlett Packard workstation at our San Francisco location.

Call Directly:
415 394 8888
ext 247

hp HEWLETT
PACKARD
Authorized Dealer

**POWER
CONTINUES
SHIFT**

HEWLETT PACKARD
WORKSTATION

Computown



SAN FRANCISCO
756 MARKET ST.
MON-FRI 8.30-6, SAT 11-4

415
956
8696

MOUNTAIN VIEW
2444-A OLD MIDDLEFIELD WAY
MON-FRI 8-6, SAT 11-4

415
962
8696

PLEASANT HILL
1525 CONTRA COSTA BLVD
MON-FRI 9-6, SAT 10-4

510
682
8696

MILPITAS
372 SOUTH ABBOT AVE
MON-FRI 9-6, SAT 11-4

408
262
1200



TOSHIBA

T4400C

i486SX / 25 MHz
4 MB RAM
120 MB HD

\$3459



TOSHIBA

T2200SX

386SX / 20 MHz
2 MB RAM
80 MB HD

CALL



TOSHIBA

Satellite T1800 Series

i386SX / 20 MHz
2 MB RAM
60 MB HD

Now only \$1299



TEXAS INSTRUMENTS

TRAVELMATE 4000 WIN SX/25

486SX / 25 MHz
4 MB RAM
120 MB HD

Now only \$2449



NEC

ULTRALITE SL 25C

i386SX / 25 MHz
2 MB RAM
120 MB HD

COLOR NOTEBOOK

Now only \$2799

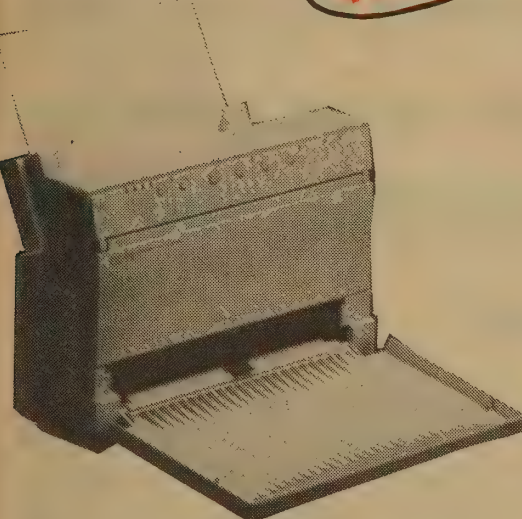


COMPAQ

LTE LITE/25C

386SL / 25 MHz
4 MB RAM
120 MB HD

CALL



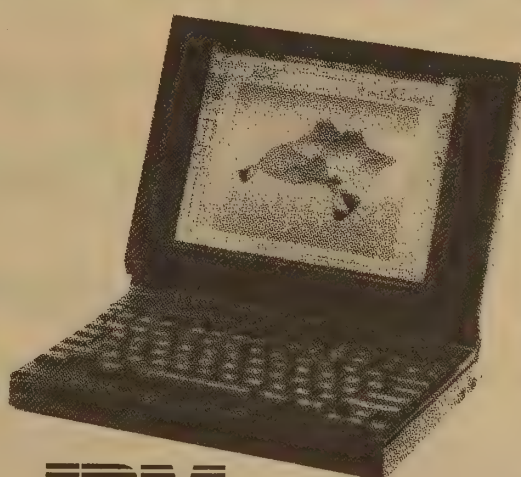
Canon

BJ-10 printer

BJ - 200 printer

\$385

\$379



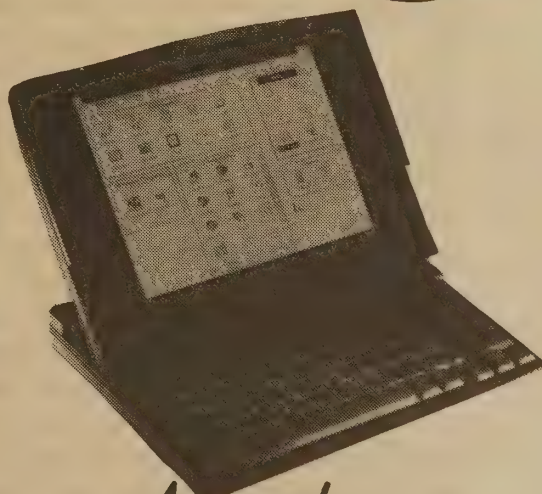
IBM

THINKPAD 700C color notebook

486SLC / 25 MHz
4 MB RAM/120 MB

(Mountain View location only)

Now in stock CALL



Aranti

486 SLC

486SLC / 25 MHz
DOS, WINDOWS
Carrying case

CALL

The World of Notebooks



SAN FRANCISCO

415
956
8696

MOUNTAIN VIEW

415
962
8696

PLEASANT HILL

510
682
8696

MILPITAS

408
262
1200

FOR IN HOUSE/ ON SITE WARRANTY REPAIRS
AND SERVICE, Call us at 415 394 8888 ext. 224

Products serviced: AST (Computers, notebooks, monitors)
COMPAQ (Computers, notebooks, monitors) HP (printers)
NEC (laptops), MACINTOSH (Computers, PowerBooks, Printers)

Reflects cash prices only

Not responsible for typographical error

Specifications are subject to change without notice
All other marks are trademarks or registered trademarks
of the products with which the marks are associated.

1st PRIZE

FrameMaker Software
NATIONWIDE
DISPLAY CONTEST

Computown

Repair Service From The Twilight Zone

Before You Buy Your Next Portable Computer, Consider The Quality Of Service That Will Be Available If Something Breaks

BY ED KAHN

It is now more important than ever to consider the hidden costs of portable computing. In the old days, when prices were not much over \$1000 for an acceptable portable computer, it was reasonable to buy a computer that had a good service policy of at least a year. Now, when you are spending considerably more, it is reasonable to expect service to be available for a much longer time. This means that you should find out *before* you buy what service will be like after the warranty period has expired. In practice, this can be extremely difficult—all manufacturers will assure you that post warranty service is no problem.

I recently came across a horror story that I think will be useful in helping you make your purchase decision. My friend bought a generic laptop machine that had the features she needed. It came with a full warranty, covering everything for the first ninety days. She figured that as long as the price was right, the machine would fit her needs. After all, if a machine works for ninety days, it will probably work for years. In general, this is true.

Unfortunately, after the warranty expired, she began to have problems. While the computer, in general, worked perfectly, she had problems when she tried to print, use an external monitor, or use the serial port. She phoned the manufacturer, who asked if the unit was under warranty. As it was not, they told her that for \$75 they would look at the machine and give her an estimate. She talked a bit longer and asked what they thought was the problem. They said that their repair facilities were limited and that with these symptoms all they could do was swap the motherboard. This, they said, would cost about \$700-\$800.

Her stomach began to turn as she persisted in looking for an affordable solution. She learned the name of the actual manufac-

turer—these folks with their name on the machine do not actually make the unit, they simply market it under their name. Through a long distance phone call she was told that if the vendor—the company whose name appears on the computer—would not stand behind the machine, she was out of luck. While it was true that she was talking to the people who made her portable computer, they had no provision for providing service, and this was the sole responsibility of the company whose name appeared on the computer.

The long and short of the story is that my friend was the loser. While the right person

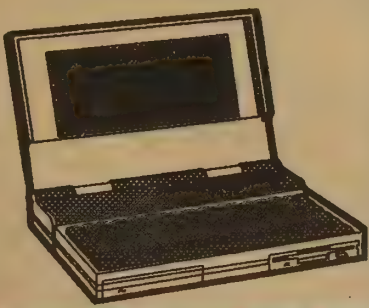
Be careful of the small companies that may or may not be here to service your computer after the warranty expires. This is extremely difficult to check out before you buy. You must learn who actually makes the computer and who will provide the service. One possible conclusion is that buying from a nationally known company may be worth the extra bucks. With the price wars of the last few years, great bargains are available from companies like Dell, Zeos, Gateway 2000, Tandy, and others. Now even IBM is cutting prices to make their product competitive with the clones. You can be sure these horror stories

In making your purchasing decision, look beyond the price and warranty. See how much support there will be after the warranty period is over.

could probably fix the machine, it seemed impossible to find that person. In reality, after the warranty period was over, the owner was left alone in the wilderness. This kind of thing would not happen with a desktop unit, but with a portable, generic parts simply will not do the job and only a specialized service man can perform most of the necessary repairs.

It was not worth it for my friend to spend half of what the machine originally cost a year ago to repair it. So last year's bargain turned out to be this year's expensive door weight. This story is not unique. As I checked into it, I found similar stories about manufacturers located in Taiwan or out of business.

will not be heard about the major players. The other side of the coin, however, is that some of the well-established companies charge a fortune for repairs after the warranty expires. The extra you pay up front may or may not turn out to be a bargain in the end. Some well-known manufacturers pride themselves in keeping your computer in service for years, while other expensive computers are well known to be expensive to maintain after the expiration of the warranty. In making your purchasing decision, look beyond the initial price and length of warranty. See how much support there will be after the warranty period is over. This factor may well determine how long your computer will last. ■



The difference between their prices and ours is simply too great to ignore. No wonder we've been around

SINCE 1984

(AND WHAT AUDACITY THE COMPETITION HAS TO CLAIM THAT THEY WON'T BE UNDERSOLD)

"DETERMINED TO BE BEST / DESTINED TO BE FIRST"

TOSHIBA MEMORY

T2200SX, T2000SX, T2000SX, T2000,
T5100, T3200SX, T3100SX, T3100e,
T1600, T1200XE, T1000XE/SE/LE,
and T1800, T1850, and T1850C

2MB..\$ 77
4MB..\$158
8MB..\$280

*ALL CARDS
ARE FAST 70ns

UPGRADED NOTEBOOKS

IBM THINKPAD 700/120MB W/ 20MB	\$3518
IBM THINKPAD 700C /20MB COLOR W/ 20MB	\$4909
SHARP PC-6785/80MB W/8MB RAM	\$1774
SHARP PC-6891/120MB COLOR W/ 8MB	\$3090
TOSHIBA T4400C/120MB COLOR W/ 20MB	\$4514
TOSHIBA T4400DX/200MB COLOR W/ 20MB	\$5307
TOSHIBA T6400DX/200MB COLOR W/ 20MB	\$6701

OTHER LAPTOP/NOTEBOOK MEMORY

AST PREMIUM EXEC 4MB	\$120
BCC AVANTI MODEL #025 2MB/4MB	\$161/\$322
COMMODORE CLT286/386 2MB	\$93
EVEREX TEMPO/LX 2MB/4MB	\$93
GRID 1720/1750 2MB	\$98
MITAC 3025D/3025F 4MB	\$214
NEC ULTRALITE/286F 4MB	\$208
NEC ULTRALITE/III 2MB/4MB/8MB	\$105/\$173/\$303
NEC ULTRALITE SL20/20P 2MB/6MB	\$105/\$244
NEC ULTRALITE SL25C 2MB/4MB/8MB	\$105/\$173/\$303
PANASONIC CF170/270/370 1MB/2MB	\$58/\$98
PANASONIC CF-470/480 2MB/6MB	\$158/\$385
SANYO MBC-17NB/18NB 2MB	\$93
SHARP PC-7700/7750 4MB MEMORY BOARD	\$389
SHARP PC-8041/8081 1MB MODULE	\$53
SHARP PC-8501 COLORSTAR 2MB	\$119
TANDY 1500HD/2810HD/3810HD 1MB/2MB	\$58/\$98
TANDY 2820/3820/3830 2MB/6MB	\$158/\$385
TI TRAVELMATE 4000 & WinSLC 4MB/16MB	\$221/\$CALL
ZEOS 286/386SX NOTEBOOK 2MB	\$93
ZENITH MASTERSPORT SX/SL/SLE/SLC 2MB	\$96
ZENITH Z-NOTE 2MB/8MB	\$113/\$311

DESKTOP MEMORY

APPLE MAC IIx 4MB	\$151	CPQ PROLINEA 4/33 4MB	\$146
APPLE MAC +SE/SI/VC/CX 4MB	\$150	CPQ PROLINEA 3/25 8MB	\$281
AST BRAVO LC 3/33e 2MB/8MB	\$78/\$17	CPQ SYSTEMPRO 2MB/8MB	\$98/\$377
AST BRAVO 486/25 & 4/33 2/8MB	\$102/\$330	CPQ SYSTEMPRO/LT 4/8MB	\$153/\$325
AST BRAVO LC486 4/8/16MB \$153/\$307/\$585		DECpc 433 & 433 PORTABLE 8MB	\$281
AST CUPID-32 2/4/8MB \$102/\$165/\$330		DELL 316SX 2MB	\$78
AST PREMIUM 386/486 4MB/8MB \$165/\$330		EPSON 386/33 4MB/8MB	\$146/\$291
AST PREMIUM 386/25.331MB/2MB \$51/\$102		EPSON EISA SERIES 2/8MB	\$87/\$325
AST PREMIUM 386C 4MB \$156		EPSON EQUITY486Plus 4MB	\$156
AST PREMIUM II 4MB/8MB \$165/\$330		HP 700/RX TERMINAL 4MB/8MB\$153/\$325	
AST PREMIUM SE 4/50 32MB \$1352		HP XSTATION 700/RX 8MB	\$325
AT&T 6386 2MB/4MB \$70/\$141		HP VECTRA TJU SERIES 4/8MB \$153/\$325	
IBM 34F2933 4MB \$153		NCR 386SX/IS & 486/MC 8MB	\$281
IBM 6450128 4MB \$153		NEC POWERMATE 386/25e 8MB	\$312
IBM 6450129 8MB \$325		SUN X104C/PC/1/1+ 4MB	\$156
IBM 6450130 8MB \$325		SUN ELC 4MB/16MB	\$153/\$585
IBM 6450603 1MB \$48		SUN SLC 4/20 4MB	\$153
IBM 6450604 2MB \$79		SUN SPARCSTATION 16MB	\$585
CPQ DESKPRO 4MB/8MB \$135/\$260		ZENITH 386 1MB/2MB	\$48/\$79
CPQ DESKPRO 386e 4MB \$153		ZENITH Z-STATION4MB/16MB \$153/\$585	
CPQ PROLINEA 4/33 8MB \$294			

PCMCIA SRAM MEMORY & FAX MODEMS

DEC PALMTOP, DELL 320SLI SUB-NOTEBOOK, GRID GRIDPAD,
HP 95LX, IBM PC RADIO, MOMENTA PENTOP, NCR 3125 NOTEPAD
POQET, SHARP PC3000/3100, SHARP PC-6700/6741/6781/6785,
SHARP PC-6800/6841/6881, TOSHIBA T3300SL, ZEOS POCKET PC
512K \$87 1MB \$157 2MB \$281

COMPAQ LAPTOP MEMORY

CONTURA 2MB/4MB/8MB	\$98/\$145/\$268
LTE386s/20 1MB/4MB	\$88/\$156
LTE/20 & LITE/25 1MB/4MB/8MB	\$88/\$156/\$299
PORTABLE 486 & 486C 2MB/4MB/8MB	\$79/\$153/\$325
LTE/286 1MB/2MB/4MB	\$45/\$91/\$150
SLT386s/20 4MB	\$163

LASER PRINTER MEMORY

APPLE LASERWRITER IMINT/INTX 4MB	\$151
APPLE LASERWRITER NTR 2MB REPLACEMENT	\$94
AT&T 593 LASER / C. ITOH-6 1MB/2MB/4MB	\$85/\$122/\$195
BROTHER HL-4/4V/4VPS 2MB/3MB/4MB	\$121/\$153/\$185
BROTHER HL-8E/8D/8V 1MB/2MB	\$95/\$128
CANON LBP 8I/8IIR/8IIT 1MB/2MB/4MB	\$74/\$107/\$171
COMPAQ PAGEMARQ 15 & 20 1MB/4MB/8MB	\$53/\$150/\$286
DATAPRODUCTS LZR650 1MB/1.5MB/2.5MB/4MB	\$105/\$135/\$188/\$345
EPSON ACTION LASER PLUS / EPL6000 1MB/2MB/4MB	\$80/\$112/\$177
EPSON ACTION LASER II /4100/8000 2MB/3MB/5MB	\$140/\$204
EPSON EPL-7000 2MB/3MB	\$121/\$153
HP LASERJET 2/2D 1MB/2MB/4MB	\$74/\$107/\$171
HP LASERJET 2P/2P+3/3D/3P 1/2/3/4MB	\$60/\$93/\$134/\$157
HP LASERJET FAX 1MB	\$80
HP LASERJET III/II/PAINTJET XL300 1MB/4MB/8MB	\$48/\$150/\$286
HP LASERJET 4 & 4M 1MB/2MB/4MB/8MB	\$48/\$79/\$150/\$286
HP DESIGN JET PLOTTER 1MB/4MB/8MB	\$48/\$150/\$286
HP DESKJET+500/500C 256K	\$57
IBM/LEXMARK 4019/4019e 2MB/3.5MB	\$115/\$170
IBM LEXMARK 4029 (ALL MODELS) 2MB/4MB	\$105/\$146
KYOCERA F800/800A/800T 2MB/4MB	\$137/\$202
KYOCERA F1200S/3300 2MB/3MB/4MB	\$151/\$184/\$216
MANNESMANN TALLY 905/906 1MB/2MB/4MB	\$80/\$112/\$177
MANNESMANN TALLY MT908 1MB/2MB	\$68/\$105
FACIT P8060, NCR 6435, PACKARD BELL PB-9600, TEC 1305B, TOSHIBA PAGELASER6 1MB/2MB/4MB	\$80/\$112/\$177
NEC SILENTWRITER 2 MODEL 90/290 /S60/S60P 2MB	\$137
NEC SILENTWRITER 2 MODEL 95 /97/S62P 2MB	\$120
OKIDATA OKILASER/400 2MB	\$106
OKIDATA OKILASER 800/820 2MB/3MB/4MB	\$123/\$160/\$197
OKIDATA OKILASER 810 2MB/3MB/4MB	\$146/\$183/\$220
OKIDATA OKILASER 830/840 2MB	\$165
OLIVETTI PG-108/208 1MB/2MB/4MB	\$74/\$107/\$171
PANASONIC KX-P4410/4430 2MB/3MB/4MB	\$112/\$144/\$177
PANASONIC KX-P4420/4451/44501 1MB/2MB/3MB/4MB	\$735/\$105/\$137/\$170
PANASONIC KX-P4450 1MB	\$109 NEW!
PANASONIC KX-P4455 2MB	\$128
QMS PS410 1MB/2MB/3MB/4MB	\$88/\$121/\$153/\$185
QMS PS815/825 2MB/4MB/6MB	\$168/\$233/\$297
QMS PS860 1MB/4MB/8MB	\$53/\$133/\$266
QMS PS1700 1MB/4MB/8MB	\$53/\$133/\$266
SEIKOSHA OP108 1MB/2MB	\$68/\$105
SHARP JX-9500/9700 1MB/1.5MB/2.5MB/4MB	\$105/\$135/\$188/\$345
SHARP JX-9500PS POSTSCRIPT 1MB	\$57
STAR LASER PRINTER 8 1MB/2MB/4MB	\$105/\$137/\$202
STAR /STARSCRIPT 4/4III 1MB/2MB/4MB	\$112/\$144/\$209
TI MICROLASER, PS17, PS35, XL1MB	\$57
TI MICROLASER TURBO/XL POSTSCRIPT 1MB/4MB	\$98/\$259
UNISYS AP9210 2MB/3MB	\$115/\$170

HP 95LX PALMTOP
PCMCIA 2400B MODEM/6600B FAX
\$243 (IN STOCK)

MATH COPROCESSORS

80287-10/12	\$64
80387SX-25	\$80
80387DX-33	\$81
80387DX-40	\$95
80487SX	\$430

SHARP PC-6700, 6741, 6781, 6785,
6800, 6881, 6891 RAM UPGRADES
2MB \$88 4MB \$168

We are listed in the TOSHIBA
TECHNICAL INFORMATION GUIDE
as "the least expensive memory
manufacturer approved for Toshiba
laptops and notebooks."

TOSHIBA T1200XE /T3100SX
2MB \$69 4MB \$168
TOSHIBA T4400C/SX/SXC/T6400
2/4/8/16MB \$98/\$143/\$280/\$684
TOSHIBA T5200/T5200C/T8500
2MB/8MB \$87/\$265
TOSHIBA T3300SL
2/4/8/16MB \$78/\$143/\$208/\$685

TOSHIBA T4400
213MB INTERNAL HARD
DRIVE UPGRADE KIT
IN STOCK !!!

EXTERNAL HARD DRIVE KITS
(BATTERY-POWERED)
20, 40, 60, 80, 130, AND 213MB
SIZE-PERFECT FOR LAPTOPS

APPLE POWERBOOK MEMORY

	2MB	4MB	6MB	8MB	10MB
100	\$94	\$169	\$247	X	X
140	\$94	\$143	\$209	X	X
145	\$94	\$143	\$209	X	X
170	\$94	\$143	\$209	X	X
160	X	\$207	\$250	\$402	\$480
180	X	\$207	\$250	\$402	\$480
210	X	\$169	\$234	\$269	X
230	X	\$169	\$234	\$269	X

ALL MEMORY UPGRADES
COME WITH A LIFETIME
WARRANTY & A 48 HOUR
EXCHANGE GUARANTEE !

IBM LAPTOP MEMORY

CL57SX 2MB/4MB/8MB	\$180/\$247/\$434
L40SX 2MB/4MB/8MB	\$67/\$113/\$225
N33SX 2MB/4MB	\$67/\$113
N51SX 2MB/4MB/8MB	\$109/\$154/\$300
N51SLC 2MB/4MB/8MB	\$106/\$154/\$300
THINKPAD 2MB/4MB/8MB	\$169/\$247/\$434
PC RADIO PCMCIA SRAM 512K TO 2MB	

SE HABLA ESPANOL
pregunte por Hector

tote-a-lap

550 Pilgrim Drive, Ste.F, Foster City, CA 94404

PHONE: (415)578-1901 FAX: (415)578-1914

ORDERS ONLY: 1-800-9-LAPTOP

(PRIOR APPOINTMENTS ARE NEEDED FOR WILL-CALLS, PLEASE)

TERMS AND CONDITIONS: All sales final. We charge a 25% re-stocking fee on all refused shipments and pre-approved returns. Prices are subject to change w/out notice, and reflect all cash discounts. Warranty on all merchandise, except memory upgrades, is thru the original manufacturer only, unless previously agreed upon and stated on our invoice. All software, plus all merchandise that include a rom bios, are not returnable for credit, and are subject to an even exchange only. We accept purchase orders from credit-worthy institutions, although prices may be slightly higher on some items. We will not ship to any account with an overdue balance. Purchase prices at the time of sale are final. Memory upgrades guaranteed 100% compatible.

**WE WILL
MATCH
OR BEAT
ANY PRICE!**

CASE & POWER SUPPLY

MINI TOWER (200W) CASE.....	\$52
MED TOWER/6 SLOTS/LED	78
FULL TOWER CASE/235W.....	108
AT BABY CASE w/PS	55/65
XT 150W/200W PS	31/36
AT 200W/230W PS.....	40/45
Maxiswitch KB 101	35
Adaptec 1542/1522 SCSI H/F/C.....	115/205
I/O 2S/1P/1G	15

FLOPPY & HARD DRIVES

Teac 1.2/1.44 FD	\$53/48
Conner 42 MB IDE HD	175
Conner 80 MB IDE	215
Conner 200 MB SCSI.....	385
Conner 120 MB 17ms	265
Conner 200 MB 16ms	382
Maxtor 130 MB, 16ms.....	265
Maxtor 7213, 200 MB IDE.....	375
Toshiba 3401B SCSI, 200ms CD-ROM	499
CD-ROM Creative Labs 380ms.....	219
Sound Blaster Pro w/Midi Pkg.....	159
Video Blaster Pro	275

PRICE WARS!

CD-ROM SALE!

Creative Lab CD-ROM
MIDI Kits
Sound Blaster Pro &
CD Programs (7&3) **FROM \$465**

MOTHERBOARDS

386SX-33/25 w/CPU	\$107/99
386-33 MHz, 64K Cache w/o CPU	115
386-40 MHz, 64K Cache w/CPU	185
486DX-50, 128K/256K Cache w/o CPU	128/165
486DX-33/50, 256K, Local Bus w/Tseng Lab 32 Bit SVGA 1 MB	295/305
Call for current CPU price	

MEMORY UPGRADES

1MBx9-80/70 SIMM	\$32
4MBx9-80 SIMM	125
CPU & DRAM	LOWEST
HP LASERJET II, IIP, III, IID. MEMORY UPGRADE 1/2/4 Meg Kit.....	80/119/199

MONITOR & VGA CARD

Non-int VGA card 1024x768, 256 colors, 1MB Trident chip	\$69
Orchid Pro-Designer IIS 1MB/Fahrenheit	145/215
Puretek 14" non-interlace VESA 72Hz 1024x768 0.28mm SVGA.....	330
Viewsonic 6E/5E SVGA	LOWEST
SVGA 1024x768 MGC .28mm	275
SVGA 1024x768 MGC .39mm	235
VGA 640x480 MGC	215
15" SVGA 1280x1024 .28mm, VESA	425

FAX/MODEM CARD

Tape Back-Up 120 MB	\$185
Zoltrix 96/24 fax modem	68
2400 Baud Int/Ext Modem	48/72

BOZEMAN MARKETING GROUP, INC.

16 Corning Ave., Suite 120, Milpitas, CA 95035
(Inside United Center on S. Main St. & Corning)

Mon-Sat 10am-6pm

Tel: (408) 263-3158

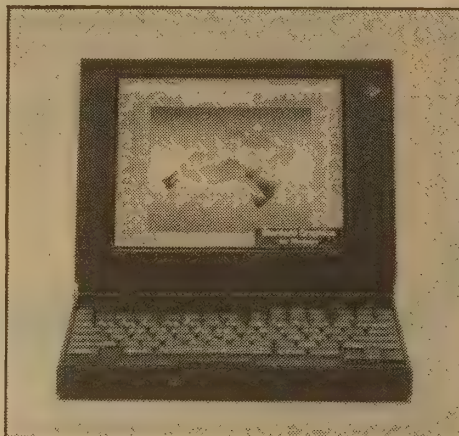
Fax: 263-6763

BUSINESS SOLUTIONS

RESOURCES:

ThinkPad 700C,
\$4,350
IBM Corp.
1133 Westchester
Ave.
White Plains, NY
10604
1-800-765-4IBM

**COMPUTER
Of The Month:**



Think Pad 700C

IBM ThinkPad 700C

I never thought I would be heaping praises on an IBM laptop. For so long they just could not seem to get it right. But now, IBM has the product to beat. This is a fast, perfectly designed color notebook powered by a 486SLC processor running at 25MHz. The processor can be upgraded to a 50MHz model (\$595). This computer is not revolutionary. Rather it is a fairly conventional product that simply has executed nearly everything to perfection.

IBM has finally listened to the marketplace and designed a computer that people want. At almost every turn, IBM has made the right choices in design choices. Although this is not the lightest unit on the market, no features have been compromised. With the introduction of pocketbook size computers, I see no reason for manufacturers to continue to eliminate things many of us want simply to achieve a smaller size. The portable market offers so many options that each customer can balance the various tradeoffs. I am personally glad to see a machine that offers the features I want in a reasonably sized unit. This computer weighs 7.7lbs. with the rechargeable battery pack. It measures 11.7" x 8.3" x 2.2", large enough to accommodate a decent keyboard and display. The basic model of the ThinkPad comes with a 120MB hard disk, which is removable for either security or upgrade purposes as well as to accommodate different users of a single machine. It comes with 4MB of RAM, expandable to 16MB. Expansion is done by adding DRAM cards, which fit neatly into slots on the side of the machine. Prices go from \$245 for 2MB cards all the way up to \$945 for 8MB cards. The computer can hold two cards in addition to the built-in memory.

The 700C offers a 10.4" display, measured diagonally. The active matrix LCD offers the most beautiful color I have seen to date on a portable. If you need a larger screen, you still have the option of connecting a VGA monitor through the video port located on the back of the machine. If you need, you can display on both an external monitor and the built-in LCD display simultaneously.

The keyboard is as good as most portable units, although I still prefer the layout of Toshiba and Dell portables to this. But that is merely a matter of preference. If you prefer, you can attach either an external numeric keypad (\$80) or a PS/2 keyboard of your choice.

The most noteworthy addition to the keyboard is the inclusion of a unique pointing device IBM refers to alternately as either a pointing stick or TrackPoint II. This is a device about the size of a pencil eraser. It is located between the G, H, and B keys and works better than any mouse I have tried. You push the head in the direction you want the pointer to go. The harder you push, the faster it goes. Two buttons at the bottom of the keyboard serve as mouse buttons. This completely eliminates the need for a surface for the mouse and makes using either Windows or OS/2 simple in "On the Go" settings.

Battery operation is limited to only two or three hours—which is not too bad for a color system. Offsetting this, however, is the ability to recharge a battery pack in about an hour and a half. You can purchase additional battery packs (\$175). Sophisticated power management allows you to control many features to lengthen the time a battery will power the computer.

The 700C comes with a serial port, a parallel port, and the option of a built-in fax/modem (\$365). For those who need more expansion capabilities, an expansion unit (\$895) is available. The computer plugs into this unit, which has a couple of expansion slots, an extra bay, and SCSI capability.

Although IBM wants you to buy OS/2 (\$195), they will deliver the machine with IBM-DOS 5.0 and ready for Windows. The documentation is clearly written and covers all of the basics. A final bonus is that IBM offers a warranty unlike any I have seen. The machine is covered for three years, internationally. In addition, there is a 24-hour, seven days a week, toll-free number to call for support. And finally, IBM offers a 30-day, quibble-free money back guarantee. If your experience is anything like mine, they will have a hard time getting the machine back in thirty days. ■

Listen To What The Experts Said About Our Systems

"A decent, low cost product that includes a few advanced components, which produces a system that performs competitively under DOS" - PC Magazine 1/93 on 486DX2/66 system

"Good component mix in its small foot-print case" - PC Magazine 10/92 on ISA 486SX/25

"There's no reason you shouldn't take advantage of this opportunity" PC Magazine 4/90 on EISA 486

(408)956-8373

Why VESA Local Bus?

The great advantage in having a VESA Local Bus (VL-bus) system can be summed up in two key words: **performance** and **standard**.

The VESA Local Bus provides a 32-bit bus running at the CPU speed (up to 50Mhz at present technology) instead of the standard 8.33Mhz ISA bus speed. Now the dramatic results are overwhelming and you will see up to **25 times** increase in performance in both video and hard disk access.

And yet it is an industry standard which means your investment will be preserved, and you can take advantage of all the new VESA add-on cards available in the market today and in the future!

VESA Local Bus Systems

- ☐ VESA 486 Local Bus motherboard
- ☐ Two (2) VESA Local Bus slots (support VESA bus mastering)
- ☐ 64K high speed processor cache
- ☐ Intel 80486 CPU
- ☐ 4MB 70ns main memory installed
- ☐ 130MB IDE hard drive
- ☐ Both 1.2 & 1.44 TEAC floppy drives
- ☐ 1:1 2HD/2FD IDE controller
- ☐ 2 serial/1 parallel/1 game ports
- ☐ Genoa 32-bit VL-Bus Graphics Accelerator SVGA w/ 1MB
- ☐ 14" .28mm SVGA color monitor
- ☐ 101-key enhanced keyboard
- ☐ Desktop case with power supply

486DX2-66/50 \$1,629/1,489

486DX-50/33 \$1,519/1,355

486SX-33/25 \$1,250/1,205

Options for VESA Systems Add

- 32-bit VESA Local Bus IDE controller \$80
- 32-bit VESA IDE controller w/1MB cache \$230
- 32-bit VESALocal Bus SCSI host adapter .. CALL
- Diamond Stealth 24VLX VL-bus SVGA \$120
- 14" flicker-free SVGA monitor (NI, VESA) \$45
- 15" flicker free non-interlaced .28mm \$130
- Super VGA monitor (VESA)
- 17" Processor control Super VGA monitor .. \$650
- 170MB/200MB IDE hard drive \$40/100
- 240MB Quantum IDE hard drive (12ms) \$190
- 340MB IDE hard drive \$360

On-site Warranty Available for All Systems

P.S. #1 Sellers

- ☐ ISA motherboard with 64K cache
- ☐ Intel 80486 CPU for 486 systems
- ☐ 4MB 70ns main memory installed
- ☐ 130MB IDE hard drive
- ☐ Both 1.2 & 1.44 TEAC floppy drives
- ☐ 1:1 2HD/2FD IDE controller
- ☐ 2 serial/1 parallel/1 game ports
- ☐ 101-key enhanced keyboard
- ☐ 14" SVGA .28 DP color monitor
- ☐ Super VGA card with 512KB
- ☐ Mini tower case with power supply

486DX2-66/50 \$1,455/1,325

486DX-50/33 \$1,385/1,225

486SX-33 \$1,130

386DX-40/33 \$970/968

Local Bus SVGA w/1MB ... Add \$95
Super VGA with 1MB Add \$20
200MB IDE drive (15ms) ... Add \$100
240MB IDE drive (12ms) ... Add \$190

P.S. Econo Systems

- ☐ ISA motherboard (128K cache for Cyrix 486, 64K for 386DX-40/33)
- ☐ 2MB main memory installed
- ☐ 40MB IDE hard drive
- ☐ 1.2 or 1.44 TEAC floppy drive
- ☐ 1:1 2HD/2FD IDE controller
- ☐ 2 serial/1 parallel/1 game ports
- ☐ 101-key enhanced keyboard
- ☐ 14" SVGA .39 DP color monitor
- ☐ Super VGA card with 512KB
- ☐ Mini tower case with power supply

Cyrix 486DXL-33 \$888

486SX-33 \$898

386DX-40/33 \$753/750

386SX-33 \$680

Super VGA with 1MB Add \$20
14" .28DP SVGA monitor .. Add \$45
85MB IDE drive (10ms) Add \$60
130MB IDE drive Add \$105

EISA 486 Systems

- ☐ EISA motherboard w/256K cache
- ☐ Intel 80486 CPU
- ☐ 4MB 70ns main memory installed
- ☐ BusLogic EISA SCSI host adapter
- ☐ 200MB SCSI hard drive
- ☐ Both 1.2 & 1.44 TEAC floppy drives
- ☐ 2 serial/1 parallel/1 game ports
- ☐ 101-key enhanced keyboard
- ☐ 14" SVGA .28 DP color monitor
- ☐ Super VGA card with 1MB
- ☐ Desktop case with power supply

486DX2-66/50 \$2,115/1,950

486DX-50/33 \$2,010/1,820

Local Bus SVGA w/1MB ... Add \$95
340 SCSI hard drive Add \$260
External SCSI Enclosure CALL
EISA Ethernet card CALL

MPC Upgrade Kit

- Sound Blaster Pro sound card
- Creative Lab CD-ROM drive
- 7 (seven) CD titles
- Two free stereo speakers

\$505

Media Concept 2.0+

- Sound Blaster compatible sound card w/MIDI interface and game port
- Microphone and 2 speakers
- Trax MIDI sequencer software

\$76

School & Corporation PO's Welcomed
VISA & MasterCard Accepted

P.S. Computers

1614 Centre Pointe Drive, Milpitas CA 95035

ORDER: (408)956-8373

Fax: (408)956-8374

Technical Support: (408)956-8380

Hours: 8AM-7PM (M-F), 10AM-4PM (Saturday) PST

- 1 year parts and 5 years labor warranty on systems
- 30-day money back guarantee upon IBM incompatibility on P.S. systems excluding peripherals and software
- Shipping, insurance and COD charges are non-refundable
- All returns are subject to 15% restocking fee
- 48-hour system burn-in
- UNIX/Novell expertise
- Life time technical support
- Prices reflect cash discount
- Prices subject to change



Freestanding Telework Centers

A Look At Three Types Of Existing Work Environments For Telecommuters

BY ROBERT MOSKOWITZ

With the rising interest in telework and an ever growing number of employees shifting to this electronic rather than physical style of "getting to work," it's only natural that the number of freestanding telework centers would increase.

A freestanding telework center is an office suite or office building dedicated to supporting workers who "telecommute" to their jobs. In most cases, a freestanding telework center is intended to be a public facility, available to anyone who wants to use it and who can pay the rates. But there can be private ones, and—of course—it's possible to use existing offices to which people now commute as telework centers for other workers who live nearby but who would ordinarily commute to an office across town. (More about this exciting concept in months to come.)

For now, let's consider three classes of telework centers, as follows:

Satellite Centers—These are generally freestanding telework centers built and operated by a single company for the exclusive use of its own employees. Several of these are currently operating in California, and dozens of large companies are considering this solution. But critics charge that a satellite center is essentially another central office, and doesn't really address the unique possibilities of telecommuting.

Executive Centers—These are generally freestanding telework centers built and operated for profit. The operator opens the telework center, and offers its facilities to anyone needing a workspace. Included in this category would be small, neighborhood telework centers as well as large, centrally located centers. Executive centers often find their largest markets among people who need a workspace without any special telework capabilities, but a significant percentage of those using executive centers happen to be telecommuters.

Shared Office Sites—These are conventional central offices that employers will make available on an "exchange program basis" for the part-time use of workers who live nearby. Shared office programs hold great potential for eliminating commuter trips and vehicle miles, but are only now gearing up for imple-

mentation among the first wave of interested city, county, regional, and state governments. Once in place, these programs will theoretically allow employees to work at the closest participating site rather than the one to which they would otherwise have to commute. Government is leading the charge in this direction at least partly because government regu-

telephones, each person's workspace contains a computer hooked to PacBell's own data networks.

With the satellite center electronically linked to the main office it serves, each teleworker at the satellite center has no trouble calling up the same information, sending and receiving the same computer

In an effort to reduce congestion as well as pollution, CalTrans is experimenting with smaller telework centers located within a half a mile or a mile of the people they are intended to serve.

RESOURCES:

Office Technology Group, Inc.
(310)983-8000

Inland Empire Economic Partnership
Steve Pantel, Director
(714)947-7877

Bay Area Telecommuting Centers
(510)645-8624

Copyright © 1993 by Robert Moskowitz. All rights reserved. Robert Moskowitz is a business consultant based in Woodland Hills, CA, who writes frequently on productivity, office automation, and technology.

lations are the primary impetus to cut down on employment-related commuter trips and vehicle miles. Private firms may later join the movement toward sharing offices electronically, once the concept proves out in practice. Rather than discuss theoretical models, however, we'll delay our look at such programs as the Telework Facilities Exchange Program until they have booked some practical experience.

SATELLITE CENTERS

Right now in California, there are very few company-owned satellite telework centers. Pacific Bell, a leader in telecommuting programs, has two satellite centers now fully operational: one in North Hollywood, and another in downtown San Francisco.

PacBell's satellite centers are simple offices based on the traditional layout of cubicles, desks, and chairs. But in addition to the expected file cabinets, bookcases, and

(and telephone) messages, and using the same centralized word processing and other computer services as they would in their normal work locations.

EXECUTIVE CENTERS

One of the organizations best at operating executive centers is Office Technology Group, Inc. (OTG). The company either joint ventures with, or provides management services to, building owners who want to provide an executive center as a service to their tenants and as an additional source of rental revenue.

OTG presently manages five telecommuting centers in California, and is currently opening three others. According to Frank Cottle, executive vice president and co-founder of the company, "We have been doing this successfully for a number of years, and we're making money at it."

Present sites include the Greater Los Angeles World Trade Center, Downtown Plaza,

Don't miss JDR's "Vendor Sale" on February 13, 1993!

Some of our most prominent vendors will be here to answer your questions and demonstrate their products on Saturday, February 13th



CITIZEN

BORLAND



UNIFORM 1993 is the largest and most comprehensive UNIX & Open Systems event in the world! *It's Hot - It's New - It's Answers - It's Now:*

- **350 exhibitors with answers** - all the major players - all the hot new technologies - all the answers you need now!
- **On-Line, Real-Time Show Network** - Multi-vendor Ethernet demonstration - see UNIX & Open Systems interoperability in action.
- **125 new Conference and Tutorial solutions** - Call 1-800-323-5155 for details on this outstanding program.
- **FREE Open Systems Introductory Primers** - Learn the basics on UNIX & Open Systems from industry experts.
- **FREE Exhibitor Briefings** - Technology in Action - hot new Products, Systems and Services - up-and-running for your review.
- **FREE Keynote & Plenary sessions** - Lively and informative daily analysis of current critical issues, presented by the biggest names in the industry.
- **FREE Birds-of-a-Feather gatherings** - technical, topic-specific meetings by and for UNIX & Open Systems users.
- **Plus many other 10th Anniversary Conference surprises!**



UNIFORM 1993

MARCH 17-19, MOSCONE CENTER, SAN FRANCISCO

REGISTER NOW

- BY MAIL:** Complete and mail your FREE registration card TODAY!
BY FAX: 1-708-260-0396
BY PHONE: Call 1-800-323-5155 for Detailed Conference Info
 Outside the U.S. and Canada, Call 1-708-260-9700

UNIFORM 1993 • 191 South Gary Avenue • Carol Stream, Illinois 60188-2092 U.S.A.

UNIX is a registered trademark of USL

UNIFORM 1993 Exhibit Hours:

Wednesday, March 17 10 a.m. to 6 p.m.
 Thursday, March 18 10 a.m. to 6 p.m.
 Friday, March 19 10 a.m. to 4 p.m.

Sponsored by



REGISTER FREE

FIRST NAME										LAST NAME										TITLE																			
COMPANY																														AREA CODE					TELEPHONE				
ADDRESS																														AREA CODE					FAX				
CITY										STATE					POSTAL/ZIP CODE										COUNTRY														

- 1. MY JOB FUNCTION/TITLE (select one only):**
- ☐ A President/Principal/Vice President/Director
 - ☐ B Corporate Administration/Financial Officer
 - ☐ C Data Communications/Telecommunications Management
 - ☐ D MIS/DP Management
 - ☐ E Engineering/Technical/Manufacturing/Operations Management
 - ☐ F Sales & Marketing Management
 - ☐ G R&D/Software Development
 - ☐ H Applications/Systems Programmer/Analyst
 - ☐ J Purchasing
- 2. PRIMARY BUSINESS OF MY ORGANIZATION (select one only):**
- ☐ K Financial Services
 - ☐ L Utilities/Transportation
 - ☐ M Government/Military/Defense

- ☐ N Engineering/Science/R&D
- ☐ P Education
- ☐ Q Medical & Health Services
- ☐ R Consulting Services
- ☐ S Wholesale/Retail Trade
- ☐ T Communications/Telecommunications
- ☐ U VAR/Dealer/Distributor/OEM/Retailer
- ☐ V Software Developer
- ☐ W Manufacturing (non-computer)
- ☐ X Systems Integrator/Service Provider
- ☐ Y Manufacturer of Computers/Systems/Software/Peripherals
- ☐ Z Other Business

- 3. NUMBER OF EMPLOYEES IN MY ORGANIZATION (all locations):**
- ☐ AA 1-50
 - ☐ BB 51-500
 - ☐ CC 501-5000
 - ☐ DD Over 5000

- 4. NUMBER OF YEARS I HAVE USED UNIX:**
- ☐ EE None
 - ☐ FF 1 to 5 years
 - ☐ GG Over 5 years

- 5. MY DEGREE OF PURCHASE INFLUENCE ON INFORMATION PRODUCTS/SERVICES:**
- ☐ HH I make the final decision
 - ☐ JJ I recommend and strongly influence the final decision
 - ☐ KK I specify products/services that we need
 - ☐ LL I play no role in the purchasing process

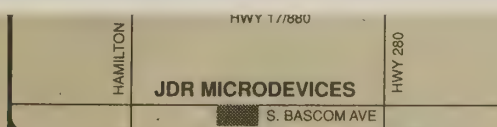
- 6. I SPECIFY OR INFLUENCE THE PURCHASE OF (check all that apply):**
- ☐ MM Mainframes/Superminis
 - ☐ NN Minicomputers/Small Business Computers/Micros/Desktops
 - ☐ PP Software (Operating Systems)
 - ☐ QQ Software (Applications)
 - ☐ RR Network/Communications Systems
 - ☐ SS Office Automation Systems
 - ☐ TT LAN Equipment/Systems/Services
- 7. MY COMPANY'S TOTAL GROSS SALES OR REVENUES:**
- ☐ UU Under \$1 million
 - ☐ VV \$1-\$24 million
 - ☐ WW \$25-\$99 million
 - ☐ XX \$100-\$249 million
 - ☐ YY \$250-\$499 million
 - ☐ ZZ \$500 million and over

NOTE: No one under the age of 18 admitted.

AA AB AC AD AE AF AG AH

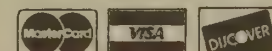


1238 South Bascom Avenue
 San Jose, CA 95128 (408)559-7724 Fax: (408)947-8234



Prices effective 2/8/93 through 3/8/93 at this location only.

30-day Money-Back Guarantee and 1-Year Warranty!!!



Hard Drives



15	\$149.95
30ms	\$199.95
9ms	\$259.95
2ms	\$399.95
ms	\$949.95

Hunters' specials

regularly \$239.95	\$169.95
regularly \$639.00	\$299.95
regularly \$749.00	\$399.95
regularly \$299.95	\$169.95
regularly \$129.95	\$79.95
regularly \$129.95	\$39.95
regularly \$189.95	\$59.95
regularly \$79.95	\$29.95

stock on hand and are covered by our guarantee and one-year warranty (parts and labor). Returns that have been tested and approved. Check the latest specials today!

Dear Customer,

Welcome to JDR's Catalog Outlet store! Since 1979, we've offered high-quality, high-tech merchandise and excellent customer service and support. Many of our everyday items, you'll also find reduced items, and special savings. We offer FREE on-site JDR product, 24-hour and a one-year parts standard since 1979! We see you at the JDR Catalog
 Doug Bailey

Freestanding Telework Centers

A Look At Three Types Of Existing Work Environments For Telecommuters

BY ROBERT MOSKOWITZ

With the rising interest in telework and an ever growing number of employees shifting to this electronic rather than physical style of "getting to work," it's only natural that the number of freestanding telework centers would increase.

A freestanding telework center is an office suite or office building dedicated to supporting workers who "telecommute" to their jobs. In most cases, a freestanding telework center is intended to be a public facility, available to anyone who wants to use it and who can pay the rates. But there can be private ones, and—of course—it's possible to use existing offices to which people now commute as telework centers for other workers who live nearby but who would ordinarily commute to an office across town. (More about this exciting concept in months to come.)

For now, let's consider three classes of telework centers, as follows:

Satellite Centers—These are generally freestanding telework centers built and operated by a single company for the exclusive use of its own employees. Several of these are currently operating in California, and dozens of large companies are considering this solution. But critics charge that a satellite center is essentially another central office, and doesn't really address the unique possibilities of telecommuting.

Executive Centers—These are generally freestanding telework centers built and operated for profit. The operator opens the telework center, and offers its facilities to anyone needing a workspace. Included in this category would be small, neighborhood telework centers as well as large, centrally located centers. Executive centers often find their largest markets among people who need a workspace without any special telework capabilities, but a significant percentage of those using executive centers happen to be telecommuters.

Shared Office Sites—These are conventional central offices that employers will make available on an "exchange program basis" for the part-time use of workers who live nearby. Shared office programs hold great potential for eliminating commuter trips and vehicle miles, but are only now gearing up for imple-

mentation among the first wave of interested city, county, regional, and state governments. Once in place, these programs will theoretically allow employees to work at the closest participating site rather than the one to which they would otherwise have to commute. Government is leading the charge in this direction at least partly because government regu-

lation, each person's workspace contains a computer hooked to PacBell's own data networks.

With the satellite center electronically linked to the main office it serves, each teleworker at the satellite center has no trouble calling up the same information, sending and receiving the same computer

In an effort to reduce congestion as well as pollution, CalTrans is experimenting with smaller telework centers located within a half a mile or a mile of the people they are intended to serve.

RESOURCES:

Office Technology Group, Inc.
(310)983-8000

Inland Empire Economic Partnership
Steve Pantel, Director
(714)947-7877

Bay Area Telecommuting Centers
(510)645-8624

Copyright © 1993 by Robert Moskowitz. All rights reserved. Robert Moskowitz is a business consultant based in Woodland Hills, CA, who writes frequently on productivity, office automation, and technology.

lations are the primary impetus to cut down on employment-related commuter trips and vehicle miles. Private firms may later join the movement toward sharing offices electronically, once the concept proves out in practice. Rather than discuss theoretical models, however, we'll delay our look at such programs as the Telework Facilities Exchange Program until they have booked some practical experience.

SATELLITE CENTERS

Right now in California, there are very few company-owned satellite telework centers. Pacific Bell, a leader in telecommuting programs, has two satellite centers now fully operational: one in North Hollywood, and another in downtown San Francisco.

PacBell's satellite centers are simple offices based on the traditional layout of cubicles, desks, and chairs. But in addition to the expected file cabinets, bookcases, and

(and telephone) messages, and using the same centralized word processing and other computer services as they would in their normal work locations.

EXECUTIVE CENTERS

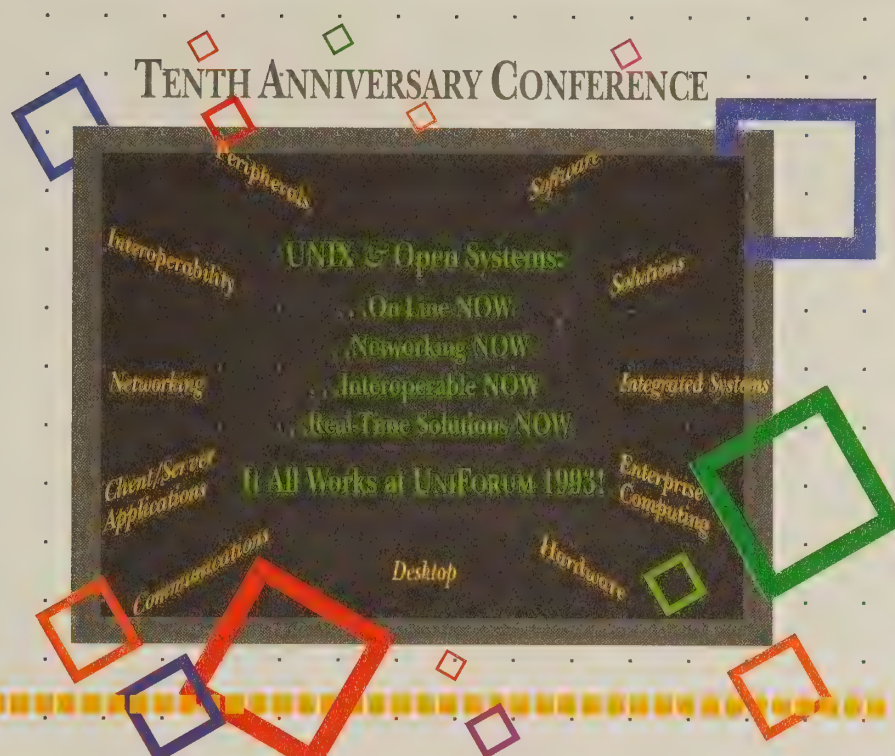
One of the organizations best at operating executive centers is Office Technology Group, Inc. (OTG). The company either joint ventures with, or provides management services to, building owners who want to provide an executive center as a service to their tenants and as an additional source of rental revenue.

OTG presently manages five telecommuting centers in California, and is currently opening three others. According to Frank Cottle, executive vice president and co-founder of the company, "We have been doing this successfully for a number of years, and we're making money at it."

Present sites include the Greater Los Angeles World Trade Center, Downtown Plaza,

UNIForum 1993 is the largest and most comprehensive UNIX & Open Systems event in the world! **It's Hot - It's New - It's Answers - It's Now:**

- **350 exhibitors with answers** - all the major players - all the hot new technologies - all the answers you need now!
- **On-Line, Real-Time Show Network** - Multi-vendor Ethernet demonstration - see UNIX & Open Systems interoperability in action.
- **125 new Conference and Tutorial solutions** - Call 1-800-323-5155 for details on this outstanding program.
- **FREE Open Systems Introductory Primers** - Learn the basics on UNIX & Open Systems from industry experts.
- **FREE Exhibitor Briefings** - Technology in Action - hot new Products, Systems and Services - up-and-running for your review.
- **FREE Keynote & Plenary sessions** - Lively and informative daily analysis of current critical issues, presented by the biggest names in the industry.
- **FREE Birds-of-a-Feather gatherings** - technical, topic-specific meetings by and for UNIX & Open Systems users.
- **Plus many other 10th Anniversary Conference surprises!**



UNIForum 1993

MARCH 17-19, MOSCONE CENTER, SAN FRANCISCO

UNIForum 1993 Exhibit Hours:

Wednesday, March 17 10 a.m. to 6 p.m.
Thursday, March 18 10 a.m. to 6 p.m.
Friday, March 19.....10 a.m. to 4 p.m.

Sponsored by



REGISTER NOW
BY MAIL: Complete and mail your FREE registration card TODAY!
BY FAX: 1-708-260-0396
BY PHONE: Call 1-800-323-5155 for Detailed Conference Info
Outside the U.S. and Canada, Call 1-708-260-9700

UNIForum 1993 • 191 South Gary Avenue • Carol Stream, Illinois 60188-2092 U.S.A.

UNIX is a registered trademark of USL

REGISTER FREE

FIRST NAME										LAST NAME										TITLE																			
COMPANY										AREA CODE										TELEPHONE																			
ADDRESS										AREA CODE										FAX																			
CITY										STATE										POSTAL/ZIP CODE										COUNTRY									

1. MY JOB FUNCTION/TITLE (select one only):

☐ A President/Principal/Vice President/Director

☐ B Corporate Administration/Financial Officer

☐ C Data Communications/Telecommunications Management

☐ D MIS/DP Management

☐ E Engineering/Technical/Manufacturing/Operations Management

☐ F Sales & Marketing Management

☐ G R&D/Software Development

☐ H Applications/Systems Programmer/Analyst

☐ J Purchasing

2. PRIMARY BUSINESS OF MY ORGANIZATION (select one only):

☐ K Financial Services

☐ L Utilities/Transportation

☐ M Government/Military/Defense

☐ N Engineering/Science/R&D

☐ P Education

☐ Q Medical & Health Services

☐ R Consulting Services

☐ S Wholesale/Retail Trade

☐ T Communications/Telecommunications

☐ U VAR/Dealer/Distributor/OEM/Retailer

☐ V Software Developer

☐ W Manufacturing (non-computer)

☐ X Systems Integrator/Service Provider

☐ Y Manufacturer of Computers/Systems/Software/Peripherals

☐ Z Other Business

(please specify)

3. NUMBER OF EMPLOYEES IN MY ORGANIZATION (all locations):

☐ AA 1-50

☐ BB 51-500

☐ CC 501-5000

☐ DD Over 5000

4. NUMBER OF YEARS I HAVE USED UNIX:

☐ EE None

☐ FF 1 to 5 years

☐ GG Over 5 years

5. MY DEGREE OF PURCHASE INFLUENCE ON INFORMATION PRODUCTS/SERVICES:

☐ HH I make the final decision

☐ JJ I recommend and strongly influence the final decision

☐ KK I specify products/services that we need

☐ LL I play no role in the purchasing process

6. I SPECIFY OR INFLUENCE THE PURCHASE OF (check all that apply):

☐ MM Mainframes/Superminis

☐ NN Minicomputers/Small Business Computers/Micros/Desktops

☐ PP Software (Operating Systems)

☐ QQ Software (Applications)

☐ RR Network/Communications Systems

☐ SS Office Automation Systems

☐ TT LAN Equipment/Systems/Services

7. MY COMPANY'S TOTAL GROSS SALES OR REVENUES:

☐ UU Under \$1 million

☐ VV \$1-\$24 million

☐ WW \$25-\$99 million

☐ XX \$100-\$249 million

☐ YY \$250-\$499 million

☐ ZZ \$500 million and over

NOTE: No one under the age of 18 admitted.

AA AB AC AD AE AF AG AH

Detach & Mail (Postage Free).

Form must be received by Friday, February 26, 1993.
Your Free Exhibits Only
Badge will be sent to you by return mail.

- FAX: 1-708-260-0396
- After February 26, bring this card with you to the Show for FREE on-site registration. Without this card, on-site registration is \$25.
- For Tutorial and Conference details, call 1-800-323-5155
- For airline, hotel and rental car needs, call 1-800-999-0925.
- For UniForum Association membership information, call 1-800-255-5620

1993 EXHIBITORS

☐ A/SOFT DEVELOPMENT, INC.
ADDISON-WESLEY PUBLISHING CO.
ADOBE SYSTEMS, INC.
ADVANCE MICRO RESEARCH, INC.
ADVANCED ARCHIVAL PRODUCTS, INC.
ADVANCED SOFTWARE AUTOMATION, INC.
AGE
ALTOS COMPUTER SYSTEMS
AMDAHL CORP.
AMERICAN DIGITAL DATA ASSOCIATES
ANDROMEDA SYSTEMS, INC.
APPGEN BUSINESS SOFTWARE
APPLE COMPUTER, INC.
APPLIX, INC.
ARIES RESEARCH, INC.
ARNET CORP.
AT&T COMMVAULT SYSTEMS
AT&T INTELLECTUAL PROPERTY DIV.
ATHERTON TECHNOLOGY
ATRIA SOFTWARE, INC.
AUSPEX SYSTEMS, INC.
AXIL WORKSTATIONS, A DIV. OF HYUNDAI
☐ BASIS, INC.
BERKLEY SOFTWARE DESIGN
BORLAND INTERNATIONAL, INC.
BRISTOL TECHNOLOGY, INC.
☐ CABLETRON SYSTEMS
CADRE TECHNOLOGIES, INC.
CAHNERS PUBLISHING
CAMBEX CORP.
CASEWARE, INC.
CENTERLINE SOFTWARE, INC.
CENTRAL DATA
CENTURY SOFTWARE
CHASE RESEARCH
CHORUS SYSTEMS, INC.
CINCOM SYSTEMS, INC.
CLARINET COMMUNICATIONS CORP.
CLEO COMMUNICATIONS
CMP PUBLICATIONS
COGNOS, INC.
COMBS INTERNATIONAL, INC.
COMPAQ COMPUTER CORP.
COMPU SERV/COLLIER-JACKSON
COMPUADD CORP.
COMPUTER ASSOCIATES INTERNATIONAL
COMPUTER EXPRESSIONS, INC.
COMPUTER PUBLISHING GROUP
CONCEPTS DYNAMIC, INC.
CONSENSUS COMPUTERS
COROLLARY, INC.
COURSEWARE TECHNOLOGIES
CRAY RESEARCH, INC.
CROSSWIND TECHNOLOGIES
CUCUMBER INFORMATION SERVICES
CUMULUS TECHNOLOGY CORP.
☐ DATA GENERAL CORP.
DELL COMPUTER CORP.
DELTA MICROSYSTEMS
DIAB DATA, INC.
DICKENS DATA SYSTEMS
DIGIBOARD
DIGITAL EQUIPMENT CORP.
DIGITAL TOOLS, INC.
DISPLAY INDUSTRY ASSN.
DISTRIBUTED COMPUTER SOLUTIONS
DISTRIBUTED PROCESSING TECHNOLOGY
DUPLICATION TECHNOLOGY

☐ EAKINS OPEN SYSTEMS
88OPEN CONSORTIUM, LTD.
ELAN COMPUTER GROUP, INC.
EMERSON COMPUTER POWER/MICRO UPS
EMPRESS SOFTWARE INC.
EMULEX CORP.
EPOCH SYSTEMS, INC.
EQUINOX SYSTEMS, INC.
ESRI - ENVIRONMENTAL SYSTEMS RESEARCH
EVEREX SYSTEMS, INC.
EXPOCONSUL INT'L, INC.
☐ FOUR SEASONS SOFTWARE
FOURGEN SOFTWARE TECHNOLOGY
FRAME TECHNOLOGY CORP.
☐ GAIN TECHNOLOGY, INC.
GREEN HILLS SOFTWARE, INC.
☐ HELIOS SYSTEMS
HEWLETT-PACKARD CO.
HIGHLAND SOFTWARE
HITACHI, LTD.
HUMAN DESIGNED SYSTEMS, INC.
HUMMINGBIRD COMMUNICATIONS LTD.
HUNTER SYSTEMS
HYPERDESK CORP.
☐ IAUG-INT'L. AIX USER GROUP
IBM CORP.
ICL, INC./FUJITSU
IDE/INTERACTIVE DEVELOPMENT
ENVIRONMENTS, INC.
IGM
IMSL, INC.
INFORMATION BUILDERS, INC.
INFORMATION DIMENSIONS, INC.
INFORMIX
INGRES
INSTITUTE FOR
ADVANCED PROFESSIONAL STUDIES
ICCP
INSTRUCTION SET
INTEGRATED COMPUTER SOLUTIONS, INC.
INTEGRIX, INC.
INTEL CORP.
INTELLICORP, INC.
INTERACTIVE SYSTEMS (EASTMAN KODAK)
INTERGRAPH CORP.
INTERLEAF
INTERNATIONAL SPECTRUM
INTERPHASE CORP.
INTERSOLV
IQ SOFTWARE
ISLAND GRAPHICS CORP.
IXI, LTD.
IXOS SOFTWARE GMBH
☐ JOHN WILEY & SONS, INC.
JVACC, INC.
☐ KEYWORD OFFICE TECHNOLOGIES, LTD.
KL GROUP INC.
KOFAX IMAGE PRODUCTS
☐ LAGO SYSTEMS
LAN COMPUTING
LANDMARK SYSTEMS CORP.
LINK TECHNOLOGIES, INC.
LOCUS COMPUTING
LOGICRAFT, INC.
LOTUS DEVELOPMENT
LUCID, INC.
LYNX REAL-TIME SYSTEMS, INC.
☐ MAXPEED
MAYNARD, AN ARCHIVE CO.
MEGATEK CORP.
MERCURY INTERACTIVE CORP.

METRON SYSTEMS INC.
MICROTEC RESEARCH, INC.
MINDCRAFT, INC.
MKS, INC. (MORTICE KERN SYS., INC.)
MORNING STAR TECHNOLOGY, INC.
MOTOROLA/COMMERCIAL SYSTEMS
M&T PUBLISHING/DR. DOBBS JOURNAL
MULTI-TECH SYSTEMS, INC.
MULTILINGUAL TECHNOLOGIES CORP. (MTC)
☐ NCR CORP.
NEAL NELSON & ASSOCIATES
NETWORK COMPUTING DEVICES, INC. (NCD)
NETWORK GENERAL CORP.
NEURON DATA, INC.
☐ O'REILLY & ASSOCIATES, INC.
OBERON SOFTWARE, INC.
OPEN SOFTWARE FOUNDATION
OPEN SYSTEMS TODAY!
OPEN TECHNOLOGY SERVICES, INC.
ORACLE CORP.
OVERLAND DATA, INC.
☐ PACER SOFTWARE, INC.
PAGEONE CORP.
PARALLAX GRAPHICS, INC.
PARCPLACE SYSTEMS
PARITY
PATRICIA SEYBOLD'S GROUP
PCI PUBLISHING
PENCOM SYSTEMS
PERFORMANCE AWARENESS
PERFORMIX, INC.
POSTALSOFT, INC.
PRENTICE HALL PUBLISHERS
PRIOR DATA SCIENCES LTD.
PROCASE CORP.
PROGRAMMING RESEARCH
PROFESSIONAL PRESS
PROGRESS SOFTWARE CORP.
PROMARK
PURE SOFTWARE, INC.
PYRAMID TECHNOLOGY
☐ Q STAR TECHNOLOGIES, INC.
QMS
QUALITY SOFTWARE PRODUCTS
QUALIX GROUP
QUANTUM BOOKS
QUARTERDECK OFFICE SYSTEMS
☐ RABBIT SOFTWARE CORP.
RAD TECHNOLOGIES, INC.
RAINBOW TECHNOLOGIES, INC.
RAXCO, INC.
REMEDY CORP.
RESELLER MANAGEMENT
ROYAL DUTCH FAIRS/OPEN FORUM
RSA DATA SECURITY, INC.
☐ SAMSUNG SOFTWARE AMERICA, INC.
SANTA CRUZ OPERATION, THE
SAS INSTITUTE, INC.
SEI INFORMATION TECHNOLOGY
SEQUENT COMPUTER SYSTEMS
SHUSS SYSTEMS, INC.
SIGS PUBLICATIONS GROUP/THE X JOURNAL
SILICON GRAPHICS
SIMPACT ASSOCIATES
SOFTWARE AG
SOFTWARE CLEARING HOUSE, INC.
SOFTWARE INTERFACES
SOFTWARE MAGAZINE
SOFTWARE MAINTENANCE &
DEVELOPMENT SYSTEMS, INC.
SOFTWARE MOGULS, INC.

SOFTWARE SECURITY, INC.
SOLFLOWER COMPUTER, INC.
SPARC INTERNATIONAL
SPECIALIX, INC.
STALLION TECHNOLOGIES
STAR GATE TECHNOLOGIES
STORAGE CONCEPTS
STRATUS COMPUTER, INC.
STRUCTURED SOFTWARE SOLUTIONS, INC.
SUN EXPERT, INC.
SUN MICROSYSTEMS, INC.
SUN PRO
SUN WORLD
SUNSOFT, INC.
SYSTECH CORP.
SYSTEMS STRATEGIES, INC.
☐ TADPOLE TECHNOLOGY, INC.
TALARIS SYSTEMS, INC.
TANDEM COMPUTERS
TATUNG SCIENCE & TECHNOLOGY, INC.
TEAMQUEST CORP.
TECHNOLOGY EXCHANGE CO.
TEKTRONIX, INC.
TELESOFT
TELEVIDEO SYSTEMS, INC.
TENON INTERSYSTEMS
TEXAS INSTRUMENTS - IEF
TIVOLI SYSTEMS, INC.
TRAINING ON VIDEO
TRANSARC CORP.
☐ UNIFORM ASSOCIATION
UNIFY CORP.
UNIGRAM X (G-2 COMPUTER INTELLIGENCE)
U. S. DESIGN
UNIPLEX
UNIPRESS SOFTWARE, INC.
UNISYS
UNIVEL
UNIWORX/LURNIX
UNIX EXPO/BRUNO BLENHEIM
UNIX INTERNATIONAL, INC.
UNIX REVIEW
UNIX SYSTEM LABORATORIES, INC.
UNIXWORLD
UNINET TECHNOLOGIES, INC.
☐ VENTURCOM, INC.
VERITAS SOFTWARE CORP.
V. I. CORP.
VIRTUAL TECHNOLOGIES, INC.
VISIONWARE, LTD.
VISIX SOFTWARE, INC.
VISUAL TECHNOLOGY
VISYSTEMS INC.
VMARK SOFTWARE, INC.
☐ WALKER RICHER & QUINN, INC.
WALLABY SOFTWARE CORP.
WANG LABORATORIES
WESTEK DATA STORAGE PRODUCTS, INC.
WESTERN AUTOMATION
WHITE PINE SOFTWARE, INC.
WIND RIVER SYSTEMS, INC.
WOLLONGONG GROUP, INC.
WORDPERFECT CORP.
WORKSTATION NEWS
☐ XALT SOFTWARE CORP.
XEROX-XSOFT
XVT SOFTWARE, INC.
☐ Z-CODE SOFTWARE CORP.
ZETACO

List current as of November 2, 1992

UNIFORM 1993

MARCH 17-19
MOSCONE CENTER
SAN FRANCISCO

ANNIVERSARY CONFERENCE

BUSINESS REPLY MAIL

FIRST CLASS MAIL PERMIT NO. 752 CAROL STREAM, IL

POSTAGE WILL BE PAID BY ADDRESSEE

UNIFORM 1993
191 S Gary Ave
Carol Stream IL 60188-9824

NO POSTAGE
NECESSARY
IF MAILED
IN THE
UNITED STATES

RES
Office
Group
(310)9

Inland
Econo
Steve
(714)9

Bay Ar
Teleco
Center
(510)6

Copyrig
ert Mos
served
a busine
in Wood
writes
ductivi
tion, an

Don't miss JDR's "Vendor Sale" on February 13, 1993!

Some of our most prominent vendors will be here to answer your questions and demonstrate their products on Saturday, February 13th from 9:00am to 5:00pm. Here are just some of the participating vendors:



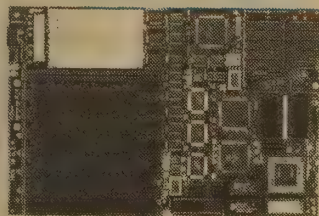
CITIZEN

BORLAND



MODULAR CIRCUIT TECHNOLOGY

**66MHz 486DX2
V.E.S.A. Local Bus
Motherboard
with 64Kb Cache**



**NEW
\$999⁹⁵**

- ~ Includes Intel i486DX2/66 CPU
- ~ Exp. to 64Mb SIMM RAM on-board
- ~ Local Bus interface cards available



**MouseMan
Serial Mouse**

**Special
\$59.95**



CITIZEN

**GSX-240
24-pin Printer**

**Special
\$329.95**

BORLAND

**Turbo Pascal
Version 7.0**

**Special
\$99.95**

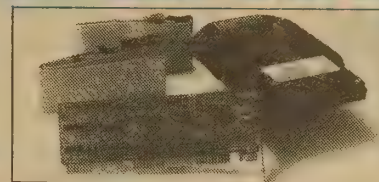


**SatisFAXtion
Modem/400**

**Special
\$499.95**

CONNER

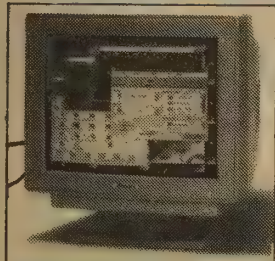
IDE Hard Drives



CP-3000 42MB 28ms 8Kb Cache	\$149.95
CP-30084 84MB 19ms 32Kb Cache	\$199.95
CP-30104 120MB 19ms 32Kb Cache	\$259.95
CP-30204 210MB 12ms 256Kb Cache	\$399.95
CP-3544 510MB 12ms 256Kb Cache	\$949.95



**17" 1024x768 Non-
Interlaced Monitor**

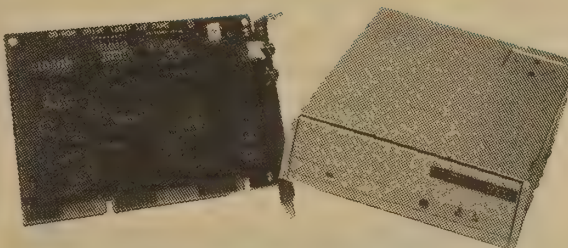


.26mm
Dot Pitch

\$899⁹⁵

Relisys 14" 1024x768 N.I. \$339.95
MCT 1024x768 1Mb SVGA \$99.95
Diamond SpeedSTAR/24X \$169.95
Windows Accelerator w/ 1Mb
Video RAM supports up to 16.7
million colors in 640x480 mode

Low-Cost Internal CD-ROM Drive



- ~ 300ms CD-ROM compatible with MPC, High Sierra and ISO 9660
- ~ Includes CD-ROM drive, interface, cables and documentation

CD-ROM bundles
available when you
purchase a CD-ROM!

\$249⁹⁵

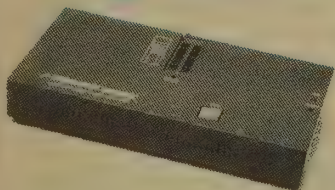
Bargain Hunters' Specials

14" 640x480 VGA Color regularly \$239.95	\$169.95
NEC CDR-83 CD-ROM regularly \$639.00	\$299.95
NEC CDR-73 CD-ROM regularly \$749.00	\$399.95
9600bps Ext. Modem regularly \$299.95	\$169.95
14" 640x480 VGA Mono regularly \$129.95	\$79.95
4 to 1 Print Sharing Dev. regularly \$129.95	\$39.95
8 to 1 Print Sharing Dev. regularly \$189.95	\$59.95
Temp. Cntrl. Solder Station regularly \$79.95	\$29.95

All Bargain Hunters' items are limited to stock on hand and are covered by our standard warranty; 30-day money-back guarantee and one-year warranty (parts and labor). All items listed above are Catalog Returns that have been tested and are in good working order. There are many Bargain Hunters' items not listed and stock in this area is constantly being updated. Check the latest specials today!

MODULAR CIRCUIT TECHNOLOGY

**Universal
Programmer/Tester**



Regularly
\$699

\$499⁹⁵

- ~ Programs EPROMs, EEPROMs, PALs, GALs, PEELs, FPLs, PLDs, EPLDs,....
- ~ Tests TTL, CMOS, SRAM and DRAM
- ~ Includes interface, cable & software

Datarase II EPROM Eraser \$39.95



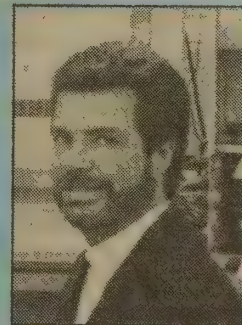
Serving you since 1979
JDR Microdevices®

**16-bit Prototyping
Card w/ Decoding Layout**



\$34⁹⁵

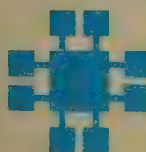
Parts Kit for 16-bit card	\$12.95
8-bit Prototyping Card w/ Decoding Layout	\$29.95
Parts Kit for 8-bit Card	\$9.95



Dear Customer,

Welcome to JDR's Catalog Outlet store! Since 1979, we've offered high-quality, high-tech merchandise and excellent customer service and support. Many of our everyday prices are 10% to 50% off our catalog prices! In addition to our everyday items, you'll also find catalog returns, discontinued items, and special purchases at big savings. We offer FREE on-site installation of any JDR product, 24-hour turnaround on repairs, and a one-year parts and labor warranty - a standard since 1979! We look forward to seeing you at the JDR Catalog Outlet soon!

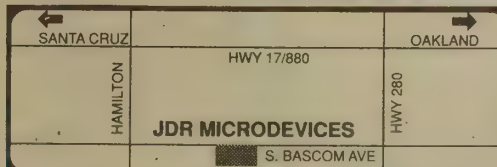
Doug Bailey



JDR Microdevices®

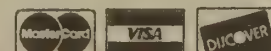
CATALOG OUTLET

1238 South Bascom Avenue
San Jose, CA 95128 (408)559-7724 Fax: (408)947-8234



Prices effective 2/8/93 through 3/8/93 at this location only.

**30-day Money-Back
Guarantee and
1-Year Warranty!!!**



and the Park Tower Building (all in Long Beach), The Tower (Westwood, Los Angeles), and HillTop office commercial development, (Richmond, East San Francisco Bay). These OTG executive centers are also connected by computer network with the Global Office Network, which electronically links 125 other locations in the USA, Canada, and Western Europe. But linkages need not stop there. Computer connections to any company's central offices can also be set up as needed via dial-up or dedicated lines.

OTG is presently negotiating to open additional centers in California. The company usually starts by signing a long-term operating agreement (similar to a hotel management agreement). It then designs and builds out the space, installs the computers, phones, and other office equipment; hires the staff; and provides the day-to-day management. OTG's centers are unusual in that they utilize sophisticated computer capabilities and a broad range of office equipment to provide a comprehensive set of office services for everyone using their facilities. Some tenants use the center one day at a time, but many

sign long-term leases and come in five days a week because the center is an inexpensive way to open a branch office or to provide a base of office support for a start-up venture.

OTG is also responsible for marketing these executive centers and signing up tenants. People come to OTG's executive centers as a result of their favorable reputation, but also because the company locates its centers in the midst of mixed business and residential densities, where many individuals and employers are looking for workspace with built-in office support. In Southern California, OTG is working with Commuter Computer to map transit patterns, and with the Air Quality Management District to have its centers certified as acceptable telecommuting centers for purposes of stringent trip reduction regulations. Although telecommuters used to make up only 5% of OTG's users, recently as many as 15-20% of the company's overall client base have fit traditional definitions of telecommuting. Many nontraditional telecommuters use the centers in unusual ways; for example, OTG users may live down the street from the executive center and come

in as needed to work electronically with clients located sixty to ninety minutes away by car.

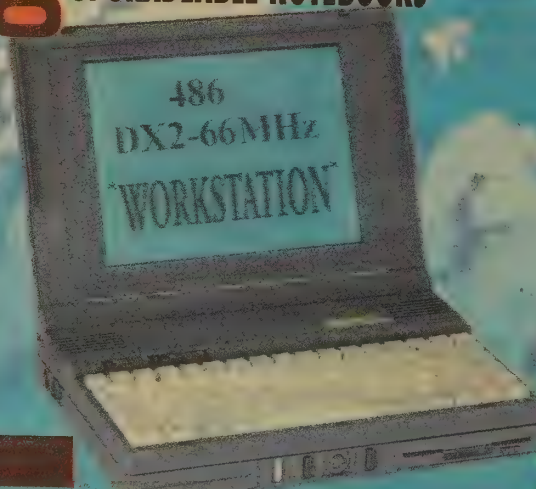
Another form of freestanding executive center follows a not-for-profit "public utility" model. The Inland Empire Economic Partnership has opened four such freestanding executive centers, one each in Apple Valley, Riverside, Ontario, and East Highland, CA. These centers provide basic computer and office services, are freely available to anyone who wants to use them, and are subsidized (at least temporarily) to promote usage and experimentation with telecommuting by employees and employers who otherwise might not try it.

At least one group has received both federal and state funding to develop two similarly structured executive centers for telework in the 580-680 corridor in the San Francisco Bay Area. Dale Pederson, project manager of Bay Area Telecommuting Centers, says the group is trying to locate its telework centers close to mass transit so people can use them without having to drive. At the present time, the board is still trying to decide on specific

AMREL 486 UPGRADEABLE NOTEBOOKS

Starting as low as...

\$1995



AMREL CPU Modules

AMREL MLT486 Notebook computers feature state-of-the-art plug in CPU Modules for fast and economical processor upgrades. Increase your computing power by simply replacing the AMREL CPU Modules. CPU Options include 386DXL33, 486DX-33, 486SX-25, 486DX2-50 MHz.

AMREL Docking Station

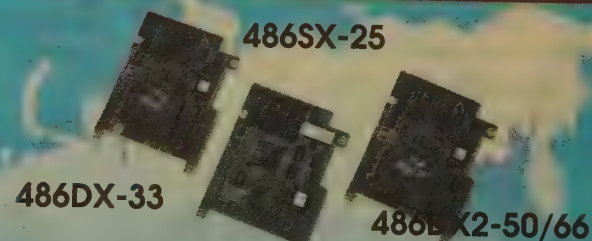
AMREL Docking Station delivers the power and expandability of desktop PCs to your MLT486. Features include two 16-bit ISA slots, internal Fax/Modem, RS232 port, parallel port, SVGA, external keyboard port and room for a 5 1/4" drive.

AMREL Trackball

Convenient built-in trackball eliminates the need for awkward add-on devices.



Quality, Savings, Service.... Directly from Manufacturer



ADD IT ALL UP...

- 30-DAY MONEY-BACK GUARANTEE
- IMMEDIATE SHIPPING
- ONE FULL YEAR PARTS & LABOR WARRANTY
- 48-HOUR SERVICE TURN AROUND TIME
- TOLL FREE TECHNICAL SUPPORT

- 4MB upgradeable to 16MB RAM
- 80MB, 120MB, 180MB, Hard Drive
- 1.44MB 3 1/2" Floppy Drive
- 10" VGA LCD with 64 gray shades
- Simultaneous external SVGA color display
- Inverted T cursor, dedicated Page keys
- 150 pin Docking Station Interface
- Serial, Parallel, Keyboard ports
- 2.5+ hours battery operation
- Suspend/Resume mode, Intelligent power saving
- MS DOS 5.0 & Windows 3.1
- Deluxe leather carrying case
- Internal Fax/Modem Option (MNP5, 9600/2400)

Fax: (818) 575-0801 • **1-800-882-6735**



AMREL TECHNOLOGY INC.
9952 E. Baldwin Place, El Monte, CA 91731

Our Computers Are Less Expensive, Better, and Faster! Largest Selection of Notebooks & Laptops

digital

Direct from
**WINNERS
CIRCLE**

- On-site support
- New aggressive pricing

VIDEO TOASTER SYSTEM 2.0!



Newtek
Authorized

Create broadcast quality television on your desktop!

THE POWER

of large PC's in a compact
pocket size!

- superlative LCD
with CGA emulation
- A suite of built-in
features
- ultra-light



**SHARP
3000**

only \$849

CDTV

from Commodore

Complete Electronic
Encyclopedia and
Professional-Level
Arcade Machine



only
\$499

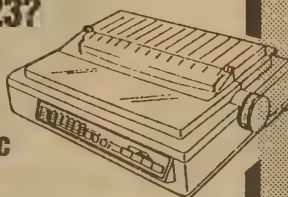
with this ad

Why Buy an Obsolete
Panasonic 1123?
When You Can Buy
a current,

Quiet

Panasonic
2123!!

Panasonic



Winners Circle Announces

In Office or In Home
One Hour
Computer Tune Up
Only \$50

Includes:

1. Overall analysis of system performance
 2. Analysis of hard disk for bad tracks
 3. Defragmentation of hard drive
 4. Consultation on disk and subdirectory organization
- This service is available within a 15-mile radius of the store. Other services are available for additional charges.

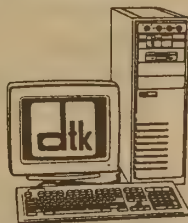


dlk

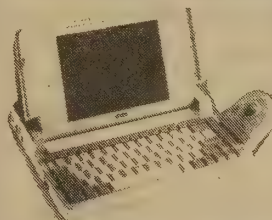
Clearly Superior

- 386SX-25
- 2MB RAM exp.
- 80MB hard disk
- 1.2 & 1.44 floppy drive
- SVGA monitor
- DOS 5.0 & extended keyboard

\$1095



The DECpc 320P Notebook



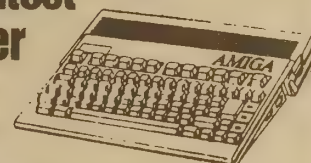
Intel i386 running at
20MHz, 2MB, 40MB IDE
Hard Disk Drive, 3.5" 1.44MB
Floppy, TST Backlit VGA,
2400bps Data, 84-Key
keyboard, Logitech Trackman
Portable, MS-DOS 5.0 and
MS Windows 3.0
(Factory installed)
(Carrying case included)

Special Package Price!

\$1395

The Greatest Computer in the World

**Amiga 600
\$399**

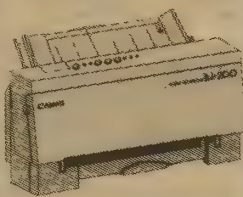


Commodore®
AMIGA

Canon Bubble Jet 200

Breakthrough Technology

Canon's new Bubble Jet printer
incorporates new print technology
that produces laser quality
printing at a truly affordable price.
With 360dpi resolution, the BJ
200 prints text and graphics with
the speed and quality of a laser
printer. And the new compact size
fits anywhere easily, without
taking up valuable space.

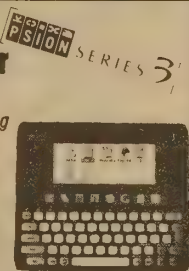


The Most Powerful Pocket-Sized Computer

Easy to use Graphical User Interface
with windows, pull-down menus, dialog
boxes and icons.

- Word Processor compatible with Microsoft
Word
- Database with cross referencing templates
- Time & Personal Management Diary
- Communicates with printer, modems, etc.
- Computer Calculator
- Expandable
- Size only 6.5"x3.3"x0.9"

\$399 In Stock

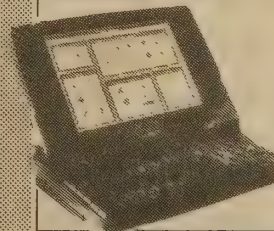


You've seen it
advertised for \$5000...

BCC

- 386SXL-20MHz Processor
- 80MB Hard Disk
- 4MB Expandable to 8MB with
Standard RAM
- Fax/Data Modem
- VGA Display

Now Only **\$1799**



AST PowerExec 3/25SL

- Intel® 386SL Processor
- 25MHz clock speed
- 4MB of high performance RAM
- 60, 80, 120, or 160MB Hard Drive



AST PowerExec 3/25SLC

- Intel® 386SL, 25MHz processor
- 4MB of high performance RAM
- 60, 80, 120, or 160MB Hard Drive
- 9.5" matrix display

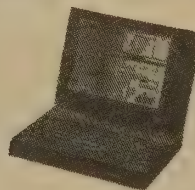


486WIN-SLC

TM 4000

- 486SLC-25MHz
- 80MB Hard Disk
- 2MB RAM
- VGA Display
- Track Ball
- Windows tied to BIOS
- Weighs 5.6lbs.

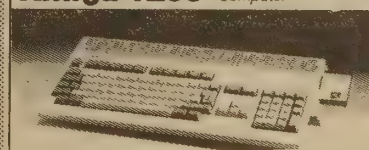
\$1849



TEXAS
INSTRUMENTS

Amiga 1200

Personal
Computer



- Advanced Graphics Architecture™
- 256,000 simultaneous colors from
a palette of 16.8 million available
- Hardware Scan Doubling for flicker
free display on 31 kHz monitors

Commodore®
AMIGA

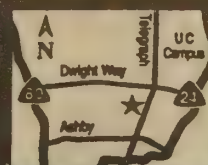
The LARGEST selection of computers and the BEST software in the world!
EXCEPTIONAL SERVICE • FREE TRAINING • THE BAY AREA'S LOWEST PRICES



WINNERS CIRCLE SYSTEMS

2618 Telegraph Ave. • Berkeley, California • 510-845-4823 • Fax 510-845-2400

Hours: Monday Thru Saturday 10:00-6:00



locations, and weighing bids to see who the corporate partners are going to be. Each center should accommodate twenty-five teleworkers, with room for another twelve to twenty in two conference rooms, one of which will have full video capabilities. Pederson estimates that the earliest date to get the first two planned centers operating would be the second quarter of 1993, and would like to see them operating no later than the third quarter.

Such executive centers can serve other purposes, too. For example, a telework center now opening its doors on the Paiute Indian Reservation in Bishop, CA, is providing economic development for that community.

The Bishop-Paiute Teleworks Center, located in Bishop on the Paiute Reservation, is initially supported by a federal grant. It recently opened in the form of a four-station telework center where training for local residents can begin. Over the next few months, center managers plan to add more capacity and commence regular business operations. The full-scale concept is to develop an industrial park anchored by the telework center, and is intended as a pilot program for economic development not only on other reservations, but also for inner cities and for

underdeveloped foreign countries.

"A lot of health insurance companies are outsourcing their data entry to such locations as Manila and Ireland," says Rod Feather, one of the key movers of the Bishop-Paiute project. "But our primary focus is broader. We're also looking at inbound 800 number processing, order processing, outbound telemarketing, accounting services, and such sophisticated work as computer-aided mapping of utilities and other services to support development planning processes anywhere in the world."

(Feather says the Center is currently looking for matching funds to help expand its capacity. For details, contact him at Communications Management Associates, Walnut Creek, CA, 510/933-7595.)

A slightly different approach to executive centers is being taken by CalTrans. In an effort to reduce congestion as well as pollution, CalTrans is experimenting with residentially based executive centers, defined as smaller telework centers located within a half a mile or a mile of the people they are intended to serve. These eliminate the centralized notion of most executive centers and satellite centers, in favor of broadly distributing many more, but smaller, centers much closer to where

people live.

Visualize your local strip center or shopping center, but with a telework center right next to the video store. CalTrans hopes people will walk or bicycle to these neighborhood centers, entirely eliminating the use of automobiles from their daily going-to-work routines.

The agency is actively seeking sites for seven to twelve such centers to be opened over the next few months, and has contracted with UC Davis to manage them and study not only how people make use of the neighborhood telework centers, but what impact they have on pollution, commuter trips, energy usage, and so forth. "It's very clearly a research project," says Michael Seaman, CalTrans's chief of the Special Projects Branch within the Office of Traffic Improvement, who is running the project. "We think," says Seaman, "that, if the idea proves out, it's ideal for California, where virtually every dwelling is within walking or biking distance of some office or retail space that could be converted to a telework center. Although we don't envision running our centers indefinitely, entrepreneurs may find our research results quite interesting and may begin to operate for-profit centers along the lines we prove out in this study." ■

WE CAN FIX IT !

ABS Can Be a One-Stop Solution For You

We Sell, Rent and Repair
Computers, Word Processors
Typewriters & Fax Machines
Pick-up and Delivery Available
FREE Labor for PC Upgrade
We Also Offer a variety of
Systems and Peripherals

Full Service Since 1967

Monitor

14" SVGA.39.....	\$225
14" SVGA.28.....	\$275
14" SVGA.28NI...	\$315
15" SVGA.28Flat.	\$499
17" SVGA.26Flat.	\$825
NEC 3FGX.....	\$679
NEC 4FG.....	\$805
NEC 5FG.....	\$1410

VGA CARD

Trident W/512.....	\$45
Trident W/1mb.....	\$65
Accumos W/256.....	\$35
Accumos W/512.....	\$45
Accumos W/1mb.....	\$89
Oak W/512.....	\$45
Oak W/1mb & Acc...	\$95
Diamond Stealth...	\$239

Hard Drive

Maxtor 80mb.....	\$249
Maxtor 130mb.....	\$279
Maxtor 210mb.....	\$389
Conner 80mb.....	\$205
Conner 120mb.....	\$269
Conner 200mb.....	\$399
Conner 500mb.....	\$929
Call for Other Options	

Misc

IDE I/O	\$19
I/O 2S/1P/1G.....	\$16
2400 Modem In.....	\$45
96/24 Fx/Md In.....	\$79
1.2 mb FDD.....	\$62
1.44mb FDD.....	\$59
101k Keybord.....	\$25
3 button Mouse.....	\$12

386dx33.....\$969

386dx40.....\$999

486dx33.....\$1269

486dx50.....\$1469

486dx2/50..\$1369

486dx2/66..\$1569

Complete Systems Include

Motherboard & CPU

W/128k Cache

120mb Hard drive

1mb Memory

Desktop or Mini Tower

SVGA Card W/512k

SVGA Monitor

101k Keyboard

IDE I/O 2S/1P/1G

1.2 or 1.44mb FDD

One Year Parts & Lifetime Labor Warranty !!!
For Other Options & Configurations Please Call

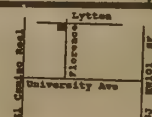
A.B.S.

Automated Business Systems

M-F 9-6 Sat 10-4

400 Florence St, Palo Alto 415/324-0616 Fax 415/324-0653

Prices Subject to Change W/O Notice, Not responsible for typographic Error .



New Generation of American Network Solutions

ISC Computers & Communications, Inc.

We are networking/communications solutions professionals serving the Silicon Valley businesses since 1988. Our commitment to excellence helps us gain the highest confidence from the corporate world. Our services are authorized by major networking market leaders such as Novell, SCO, UNIX, and Computer Associates...

Network Products for Services & Workstations . . .

USRobotics™ WordPerfect
CORPORATION



**COMPUTER
ASSOCIATES**
Software superior by design.



TELEBIT®

Maynard®
An ARCHIVE Company

DigiBoard
Connectivity Solutions from Digicom

SCO Open Desktop

- Integrates System V, GUI, networking, SQL, & MS-DOS
- A common, standards-based, open computing platform
- Supports FIBS, POSIX, X/Open (XPG3), AT&T SVID, and IBCS-2
- Provides distributed file, database and resources to remote clients
- Provide gateway service to larger systems
- Multi-processor support with SCO MPX

SCO/UNIX/NFS

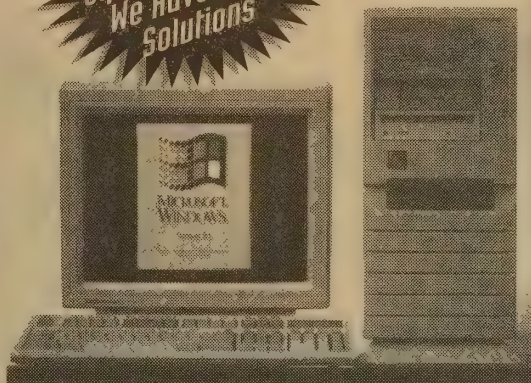
- Multiuser, multitasking environment
- Support XENIX, and UNIX System-based applications
- Access heterogeneous network with SCO NFS
- Network data sharing with SCO TCP/IP
- Support Sun-compatible NFS
- Direct access to files and applications on remote system
- RPC & XDR libraries for distributed processing apps.

Accounting

- High-end corporate/departmental solutions
- CA Accpac Plus, Macola/UNIX and more...
- Fully client-server setup or stand alone systems
- Flexible modulated and/or integrated setup
- Thousands of vertical market add-in products
- All accounting solutions tailor to industry specifics

Multi-Lingual

- Display Chinese, Japanese, Russian, Greek & English
- Server based or stand-alone language font manager
- Support practically all Windows applications
- Windows based-13 easy input methods
- Current users: American Express, UCLA, Princeton Univ., United Farm Workers of America, CATIC



Services

- Free consultation Hot Line
- Best price for networking peripherals & systems
- Network system design/training
- Modem/Phone/On-Site support
- Data/Voice/Fax networks
- Hundreds of network applications available
- Scheduled maintenance

Servers... Workstations...



NetWare 3.11/4.0*

- Support up to 2,048GB disk space and 256MB of RAM
- Files/volumes can span multiple physical hard disks
- Security as simple or complex as installation required
- Disk mirroring/duplexing. *Server mirroring
- Media independence and internetworking
- Pre-configured and specific LAN configuration avail.

NetWare SQL /NFS

- Support multiple desktop environment
- Direct access to btrieve-based data
- Support popular applications software i.e. spreadsheet and query tools like ObjectVision, MicroSoft Access
- Easy access to corporate data on multiple servers
- Utilities for loading data and building indexes

Netware For Macintosh

- Provides AppleTalk Phase I & II internetwork routing
- Routes across LocalTalk, Arcnet, Ethernet & Token Ring
- Uses native AppleTalk as transport protocol
- Supports SNMP over AppleTalk managing objects
- Macintosh users can share files with PC users
- Allows Mac users send print jobs to NetWare print server
- Support 20, 100 & 200 connections

Windows NT

- Windows NT server/personal development systems
- Server configured for collaborate development
- ISA or SCSI and CD-ROM XA options available
- Windows NT compatible CD-ROM upgrade kit available
- Fast hard drive support Windows NT's NTFS format

Your CNE's Choice

"InstaLink" Easy Printer Sharing

- Low cost alternative to LAN
- Expandable, support up to 16 computers
- Easy & economical cabling scheme
- Easy to install: no training required. Plug & Print
- High speed data transmission

Transmitter \$27.00 ea
Receiver \$29.00 ea

Tech Support Hotline:
(408) 227-2287

Tel: (408) 227-2286 • Fax: (408) 227-3086
Corporate/School PO and RFP welcome

**ISC Computers &
Communications, Inc.**

23 Great Oaks Blvd., Suite E, San Jose, CA 95119
Free initial consultation

Pollution And The Types Of Telecommuting

One much-debated question is where to locate the freestanding telework centers, and whether an employee's trip to such a center counts as one of that employer's total number of com-

muter trips to work. This is a critical issue because one of the strongest motivations for a company to support telework is to help it meet pollution reduction requirements now taking effect in metropolitan areas. Actually, quite a fierce battle is raging over the finer points of when a telecommute is—or is not—a valid way to reduce air pollution.

The main controversy involves whether or not a "cold start" is as bad as driving all the way to work. To understand this, visualize the typical

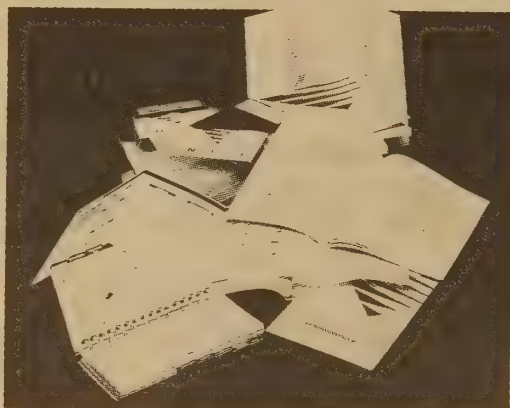
employee. He or she wakes up, dresses, and leaves for work. If he or she starts the engine of a car, that engine emits a significant portion of its daily pollution in just the first few minutes. But if he or she walks, bikes, or takes mass transit to work, that "cold start" is eliminated, and so is the pollution it generates.

Some people argue that starting your car for a drive to a freestanding telework center is nearly as polluting as driving all the way to work. They favor regulations that include people driving to telework centers in their employers' total number of commuter trips to work. Others argue that a cold start may be a source of pollution, but that total pollution certainly diminishes when the worker drives to a nearby telework center rather than all the way to a distant office, and so does overall rush-hour traffic with all its associated problems. They argue that driving to a nearby freestanding telework center is much preferable to driving across town to the company's central office, and so should not be counted as part of an employer's total number of commuter trips. So far, everyone using a freestanding telework center is getting credit for not driving to work, but this can change at any time.

In Southern California, the South Coast Air Quality Management District has promulgated Regulation 15, which requires that employers with more than one hundred employees within the South Coast Air Basin must reduce trips by implementing plans for bus riding, van pool, car pool, walk, bicycle, or telecommuting. It's a victory that telecommuting was included, but under the rule's present wording this is considered a valid method only on an exceptional basis.

In Northern California, the Bay Area Air Quality Management District has just updated its employer trip reduction regulation (Regulation 13, Rule 1, Trip Reduction Requirement for Large Employers). It now includes telecommuting as one of its thirty-five suggested methods for reducing the number of cars going to an employer's location, and even lists groups that can help an employer find ways to implement a telecommuting program. Regulation 13 thus provides people who'd personally like to begin telecommuting with a means of waking up their employer. It also allows any employer to count every teleworker as a person "at work" every day, not just on an exception basis.

FREE ADVICE IS WORTH EXACTLY WHAT YOU PAY FOR IT.



FREE ADVICE

How many times have you heard it... "We'll even throw in free training" or "Of course, training is included, free." Ya, sure, right. You'll believe it when you see it. Your mom didn't raise any fools. Let's face it - getting the proper

We're so sure that you will get the finest training anywhere, we offer this guarantee on all of our courses. If an Evernet student fails to pass any of the certification testing, we welcome them back to review the appropriate course at no additional cost.

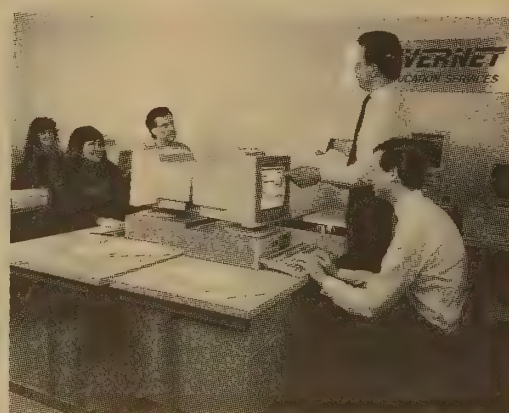


training is just as important as getting the proper hardware or software. That's why you should choose the leader in operating systems training, Evernet Education Services. Evernet Education is the most highly respected national LAN training company. Why? One

reason is that we are part of Evernet Systems, Inc. - the nation's largest network systems integrator. So you know you

are getting instructors who bring the experience gained in thousands of successful installations into classrooms furnished with the finest equipment available.

Call Evernet today for all the details on the great new things that are coming up this year.



GOOD ADVICE



CALL TODAY 1-800-447-3658

EVERNET
EDUCATION SERVICES

Los Angeles • San Francisco • Sacramento •
Houston • Chicago

"An Unbeatable Combination of Price and Performance"

MacWEEK
1/20/92

If you've been waiting for just the right combination of speed, PostScript® compatibility and price to buy a new laser printer, wait no more! Now the LX-29000™ from the Printer Works is just \$995!

NEW LOW PRICE!

Just \$995

✓ Very fast with Microsoft's Windows 3.1!

Thanks to a powerful AMD 29000 32-bit RISC processor and the ability to rasterize TrueType fonts in native mode, the LX-29000 is a dazzlingly fast performer with Microsoft's Windows 3.1.

✓ PostScript® & HP LaserJet compatible!

The LX-29000 comes with 35 typefaces and uses Microsoft's TrueImage for full compatibility with PostScript, the professional standard for graphics and typesetting. It accepts Adobe Type 1 and 3 fonts as well as TrueType fonts. It works great with Windows 3.X, Apple System 7 and all Mac and PC software that supports PostScript or TrueImage printing. And, its HP emulation easily handles non-PostScript printing.

✓ Uses Canon's dependable LX engine

The LX-29000 uses the same lightweight, small-footprint, 300 dpi, 4 ppm Canon LX engine used by HP, Apple and QMS, so supplies and service are never a problem. And Canon's patented all-in-one cartridge eliminates all that toner mess!

✓ For PC, Mac and Others!

Prints from your IBM PC or Macintosh via Centronics, RS-232C or AppleTalk interfaces. Interface selection is automatic. The LX-29000 comes with 2 megabytes RAM, a universal paper tray and a toner cartridge.

✓ Printers are our business!

We've been in business since 1982, so you can be assured that we know printers. Our prices are lower than most because we sell directly to you—no middleman! We offer a full 30-day money-back guarantee, a one year warranty on all parts and labor, plus free phone support.



PC World said "...the LX-29000 delivers graphics quickly, finishing first on our PageMaker and Excel tests."

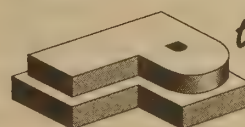
Publish magazine said "Not only does this direct-mail printer carry the smallest price tag of the six printers we tested, but we found that it prints the cleanest text as well as sharp, smooth graphics."

MicroTimes said "...[If you are] searching for a 'faster! better! cheaper!' laser printer...examine this printer"

Postscript Printer Comparison Chart

	Engine	RISC Processor	Simultaneous Interfaces	Universal Paper Tray	Money Back Guarantee	Street Price	Price Difference
LX-29000	Canon	YES	YES	YES	YES	\$995	
NEC Model 95	Minolta	NO	YES	YES	NO	\$1,450	\$455
QMS-PS 410	Canon	NO	YES	YES	NO	\$1,480	\$485
HP IIIp w/Postscript	Canon	NO	NO	YES	NO	\$1,589	\$594
Apple Personal NTR	Canon	YES	YES	YES	NO	\$1,679	\$684
IBM 4029/8P	Lexmark	NO	NO	NO	NO	\$1,695	\$700

ORDER TOLL FREE
1-800-225-6116



the **PRINTER WORKS**

3481 Arden Road, Hayward, California 94545

Accounting Systems For Small Retailers

Taking Advantage Of Tax And Accounting Rules For Operations Grossing Under \$10 Million

BY DAVID A. SIMON, CPA AND JENNIFER ROBIN CHERNISS

Resellers—be they retailers, wholesalers or distributors—confront a variety of tax and accounting problems as they manage their inventories. This article focuses on accounting issues as they affect small size retailers: defined as those with gross sales under \$10 million per year. These are the businesses too small to be covered under the uniform capitalization rules which the IRS requires very large companies to follow.

Operators of smaller retail establishments need to understand the nature of accounting and tax issues affecting them so that they can take advantage of tax planning opportunities and assure that their computerized accounting system provides adequate information for managerial and tax purposes.

In general, tax laws require that the costs of inventory—property which is held primarily for resale in the ordinary course of business—must be capitalized. The costs related to those inventories are not deductible when incurred. Rather, they are carried on the books and may only be deducted in the year in which the inventory is sold or disposed of.

Retailers must determine which of several inventory treatments apply to their operation, then select or design the computerized accounting system to track costs and generate the necessary reports. There may be multiple tax treatments available for these methods, and the retailer needs to make a timely election with the IRS as to which is opted for. Methods of inventory accounting include the LIFO [Last In, First Out] retail method, the simplified dollar-value LIFO method, simplified resale methods, and specific identification.

Different accounting software packages offer a range of choices of inventory accounting methods. In the low end, the simplest packages offer only a single method, straight FIFO [First In, First Out], so that, if a different method were desired, the user would be required to make any adjustments manually. The more sophisticated programs accommodate a variety of methods, letting the user choose. The software computes the value of ending inventory according to that method, greatly reducing the manual adjustments later

required. Before selecting software for your company, you'll need to know the method you want, then determine whether the package you're considering is compatible.

NON-INVENTORY ACCOUNTING—AVOIDING THE ACCRUAL WORLD

Many small retailers may simplify their non-inventory accounting under the rules that apply specifically to them. In the simplest cases, it may be permissible to report income and expenses on a cash basis, generally avoiding the need for more complex accrual basis accounting.

Although it's necessary to capitalize inventories, not everything else need be accounted on the accrual method in all cases. This is especially true if the business is one in which inventories are comparatively small, with little change from year to year, and only a small proportion of business is conducted on credit. In such cases, it is proper to keep books and prepare tax returns almost entirely on a cash basis, making adjustment only for the variation in opening and closing inventory.

Avoiding the need for accrual basis books may permit the option of a very low-end accounting software package, costing perhaps under \$250.

Some "Mom and Pop" size retailers have mistakenly opted for "big" accounting software. But the way to save time, aggravation, and expense on accounting products is by analyzing and understanding your needs before going shopping.

SIMPLIFIED DOLLAR-VALUE LIFO

Another way that your company can get by with relatively low-end accounting software is if you elect to use the simplified dollar-value LIFO method of inventory accounting, described below.

Only small businesses can use simplified LIFO. To be eligible, annual gross receipts for the three preceding taxable years must be under \$5 million. This gross income test must be monitored every year, and you must switch to another method of accounting if income

grows too high.

Under the broader LIFO method of inventory costing, inventory is valued at cost regardless of market value. The affect of LIFO is that, during periods of inflation, taxpayers can write off the most expensive units of inventory first, accelerating tax deductions and thereby lowering taxable income in that year.

However, due to troublesome record keeping requirements and complex calculations, many smaller businesses, for many years, did not adopt this favorable accounting method. The 1986 Tax Reform Act made LIFO more practical for small business with the simplified dollar-value LIFO method.

Under this method, inventory items are assigned to pools in accordance with major categories of governmental price indexes. An-

Even entry-level software can assist a small business with year-end tax planning.

nual fluctuations in the value of these pools is measured by changes in these indexes. Employing indexes to arrive at inventory fluctuations avoids complexities inherent in computing the LIFO value of ending inventory.

Some small businesses squander time and resources searching for an "ideal" accounting package which would allocate every inventory cost, when in fact their business qualifies for, and would be best served by, simplified LIFO. They'd do quite well without the overhead of unnecessarily complex accounting software, and the staff required to operate it. Some of the new Windows accounting packages have more than sufficient inventory capabilities for small businesses and great graphics as well.

Basic accounting software offering only the standard inventory capabilities, such as tracking inventory levels and direct costs, is generally sufficient in such cases. Your accountant can make "fine-tuning" adjustments for tax purposes near year-end.

Copyright © 1993 by David Simon. All rights reserved. David Simon, CPA (M.S., Taxation), is in tax and accounting practice in Oakland. His clients include a variety of professionals and businesses. He can be reached at (510)893-5753. Jennifer Robin Cherniss is a free-lance writer based in Berkeley.

For the Best Customer

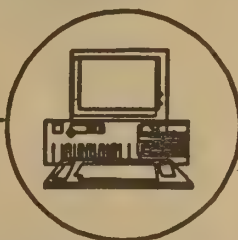
SERVICE AND SUPPORT



PC Professional, Inc.

Serving the entire Bay Area for the past twelve years

Questions about Everex and/or your



Everex computer system (s), call us:

The Authorized Everex Service Center

Everex Computers

- Everex Cube
- Everex Step
- Everex Tempo Standard
- Everex Tempo Modular
- Everex Portables

Upgrades
Parts
Service
Support

Everex Peripherals

- Everex Hard Disks
- Everex Monitors
- Everex Modems/Fax
- Everex Tape Drives
- Everex Network Products

PC Professional's Service and Support options include:

- | | |
|---------------------------------------|-----------------------|
| ◀ 8 Hour Response Time | ◀ Delivery |
| ◀ On-Site Service | ◀ Installation |
| ◀ Hardware & Software Troubleshooting | ◀ Telephone Support |
| ◀ Network Troubleshooting | ◀ Service Agreements |
| ◀ Loaners/Rentals | ◀ Technical Expertise |

The Full Service Source for All Your Computer Needs!

For the facts on Everex call us today!!

Phone: (510) 465-5700 Fax (510) 465-8327

1900 Webster St., Suite B, Oakland, 94612

RESOURCES:

David Simon, CPA, MS Taxation
Oakland, CA (510)893-5753

QuickBooks
Intuit, Inc.
155 Linfield Ave.
Menlo Park, CA 94026
1-800-624-8742.

MYOB, \$249
Teleware, Inc.
300 Roundhill Dr.
Rockaway, NJ 07866
1-800-322-MYOB

Simply Accounting, \$199
Computer Associates International, Inc.
1240 McKay Dr.
San Jose, CA 95131
1-800-225-5224

Accounting Expert
Micronetics, Inc.
5975 N. Federal Highway
Fort Lauderdale, FL 33308
1-800-443-8000

Peachtree Software, Inc.
1505 Pavilion Pl.
Norcross, GA 30093
1-800-247-3224

Users already familiar with Quicken, by Intuit, will find that QuickBooks is similar to Quicken, but also includes basic inventory capabilities. The new Peachtree products for Windows have these as well as impressive graphical report writers, for users who want more extensive analysis.

Computer Associates' Simply Accounting is a well rounded, entry-level package with inventory and retail capabilities. The program allows the user to choose between cash or accrual non-inventory accounting, but the inventory function assumes all sales are on the FIFO method; i.e., the unit which has been on hand the longest is sold first. Accordingly, an adjustment to the books may be necessary before tax reporting.

MYOB, by Teleware, likewise has simple inventory and retail sales capabilities. Its reporting capabilities are limited because the program emphasizes ease-of-use by non-accountants, at the expense of accounting versatility.

Dac Easy and Peachtree offer especially well known low-end DOS packages.

If the inventory needs of your business are simple, there is little need for a fancier package. Instead, emphasis should be given to "personalizing" the chart of accounts and the inventory categories so that the reports will be meaningful to you.

A small computer store, for instance, might aggregate all of its hardware parts into just a handful of convenient categories. They won't be able to use the computerized accounting system for inventory control, but in a little shop, reordering time can be determined just by looking on the shelf. A periodic physical inventory provides detailed support of the accounting records.

The law doesn't permit a retailer with gross sales averaging over \$5 million annually to use the simplified dollar LIFO method. However, because the business is larger and more complex, it relies on the accounting system for greater financial and managerial reporting capabilities, anyway.

TAX PLANNING FOR SMALL RETAILERS

Even entry-level software can assist a small business with year-end tax planning. For example, if a retailer has adopted the "lower of cost or market" method of valuing inventory, goods which have become unsalable or unusable in normal transactions should be valued at a bona fide selling price, less direct costs of disposition. Tax rules define bona fide selling price as the actual offering price of goods during a period ending not later than 30 days after the end of the year.

As part of year-end tax planning, the retailer should therefore determine which goods should be offered for sale at discount.

Even if all the merchandise doesn't sell, a bona fide offer should be sufficient to support a write-down for tax purposes. Computerizing inventory records in such a way that items or classes of inventory can be readily sorted makes it easier to determine the tax consequences of various discounts. The unorganized retailer misses this important opportunity.

Even the small business owner can be presented with some fairly difficult tax computations to make at year end. How should the small corporation distribute cash to its owner? If the distribution is a dividend it will be taxed twice, unless the corporation makes an election to be taxed under a special set of rules. If the distribution is a loan, the imputed interest rules will automatically cause the business to be treated as having received interest income. If the distribution is compensation for services, it will be subject to employment taxes as well as income taxes. If it's rent for the use of property, various limitations may apply to any losses.

Consider Jake, who owns 51% of the stock in Jake's NewsStand and Chips. Because Jake is a related taxpayer, no deduction will be allowed for any expenses (such as salary) payable by the newsstand to Jake until he includes the payment in his own income. Not only must Jake sit down and compute the tax consequences to the corporation, but he must simultaneously compute the tax effects to himself, personally. Without having both his business and individual transactions computerized, it would be difficult to estimate how much compensation to pay himself as part of year-end tax planning.

LARGER SMALL RETAILERS

A retailer who has outgrown entry-level accounting software should take a closer look at The Accounting Expert, by Micronetics. This is not a full-blown, high-end package, but is certainly capable in its inventory and retail functions. Micronetics includes inventory, sales analysis, and sales order processing modules, as do many of the true high-end packages, but sells for perhaps half as much and is easier to use.

Always make sure that any software you're considering accommodates the way you do business. Users often know in advance if they have some quirky requirement. If, for example, your store purchases inventory in one unit of measure, sells in a combination of other units of measure, and then sells off odd-lots or scrap. In this case, the software will need to accommodate flexible units of measure.

The next major hurdle facing retailers appears when average annual gross receipts for the three preceding years are at least \$10 million, at which point the uniform capitali-

zation rules apply.

All retailers capitalize direct costs (invoice costs, including freight) of products to be sold, but small retailers are generally not required to capitalize certain indirect costs associated with inventory. But if your company is nearing \$10 million in gross sales, be aware that the uniform capitalization rules may require complex allocations demanding more sophisticated software. It would be unfortunate for an \$8 million company to design a

In the inventory needs of your business are simple, there is little need for a fancier package. Instead, emphasis should be given to "personalizing" the chart of accounts and the inventory categories so that the reports will be meaningful to you.

system which would quickly become obsolete. [For some of the high-end packages which may be appropriate for larger retailers, see my *MicroTimes* article, "Selecting Accounting Software," July 6, 1992, or call my office for a copy.]

PERIPHERAL NOTES

Sometimes I'll hear from a store owner who, after returning from some trade show, is under the impression that the essence of a computerized accounting system is a good scanner and fancy graphics. A scanner is actually nothing more than an input device which is added on to a system of accounting and internal control previously planned and thought out by experts. The scanner has as much to do with retail accounting as a keyboard has to do with computing.

I have seen many instances of store owners signing on the dotted line for some pricey computer equipment, without having a clear understanding of what are their accounting needs. A needs assessment, conducted if necessary by a qualified accounting professional, should be your first step in selecting a retail accounting system. ■

WEDGE

SINCE 1981

WEDGE

INTRODUCING THE FIRST COMPUTER WITH A 6 FOOT SCREEN!

DETACHABLE VGA DISPLAY FOR
USE WITH OVERHEAD PROJECTOR



OPTIMIZE THE IMPACT OF YOUR
PRESENTATION

WITH

WEDGE ShowBIZ PC NOTEBOOK

Training Develop exciting interactive sessions that will keep everyone on the edge of their seats, not sleeping in them.

Sales Impress your clients with customized presentations. And get quicker decisions by giving them instant feedback to their questions with on-the-spot modifications to your material.

Education Keep your students' attention with stimulating, animated lessons. They will be marveled and inspired by the ease of use.

Demonstrations Now your audience won't have to crowd around a small screen to see live software demonstrations.

Multi-media application With the optional voice card you can develop true multi-media presentations by programming recorded voices and sounds into your material. Use the optional digitizer pad and electronic pen to highlight or footnote anything on your display screen.

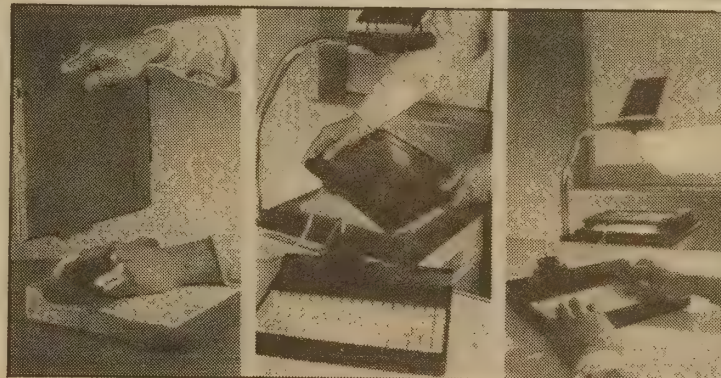
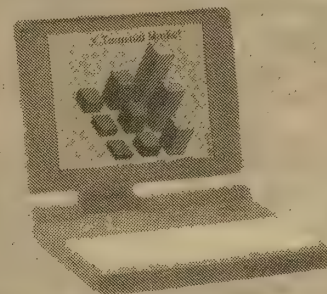
*** CALL NOW ***

OR VISIT OUR SHOWROOM

WEDGE Also provides High Quality

* 80486, 80386, and 80286 System Solutions *

WEDGE ShowBIZ PC
NOTEBOOK...ONLY 5.7 Lbs



ShowBIZ PC SPECIFICATIONS

Model:	ShowBIZ PC-325.
CPU:	386SL, 25 MHz with 64KB cache memory.
Coprocessor:	Socket for 80387SX.
Memory:	4 MB, expandable to 8 MB.
Display:	Detachable Display To Work W/Overhead Projector 640x480 VGA LCD with CCFT backlit. 180 degrees adjustment. LCD/CRT simultaneous display.
Storage:	1.44 MB Floppy drive. Removable 80/120/210 MB hard drive.
Keyboard:	84/85-key with numeric keypad built-in.
Ports:	1 serial, 1 parallel, 1 external FDD port. External keyboard and CRT connector. 1 16-bit expansion slot connector.
Battery:	Removable, rechargeable Ni-Cad battery. Battery back-up time 3 hrs. Battery recharge time 1.5 hrs.
Track ball:	Built-in.
Options:	Internal transmit/receive Fax/Modem IC card. Security system. 16-bit expansion box. Voice adaptor. LAN adaptor. Handy scanner adaptor. Handwriting digitizer. Battery charger/discharger.
OHP function:	Yes.
Dimension:	286x244x45 mm
Weight:	5.7 lbs.

CALL
FOR
SPECIAL
PRICING!



WEDGE
TECHNOLOGY, INC.
Your Partner for Success

1655 McCandless Drive, Milpitas, CA 95035

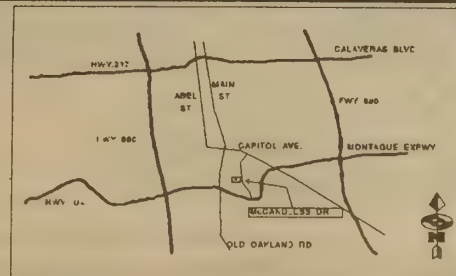
HOURL: M-F 9AM-7PM & Sat 10AM-4PM

TEL: (408)263-9888 * FAX: (408)263-9886

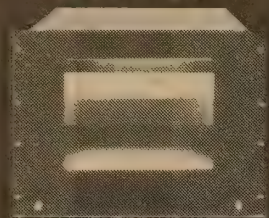
SINCE 1981

- Three years labors & 1 year parts warranty.
- Life-time technical support; On-site service available.
- Prices and availability subject to change without notice.
- Not responsible for typographical errors.
- Shipping, COD and Insurance charges are extra and non refundable.
- All returns subject to 15% restocking fee and cover only Wedge Technology brand computers, excludes peripherals and software. No refunds after 30 days.

• Corporate & Govt POs Welcome.



19" RACKMOUNT MONITOR KIT



\$280

19" RACKMOUNT KEYBOARD



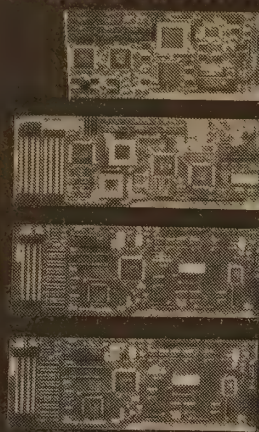
\$220

PASSIVE BACKPLANE BOARD



6 SLOT\$53
8 SLOT\$35
12 SLOT\$90
14 SLOT\$94
18 SLOT ...\$180
20 SLOT ...\$194

SINGLE CPU BOARD



Guaranteed high reliability.
100% SMD board.

286C-12 w/CPU\$150
386SXC-16 w/CPU ...\$230
386SXC-20 w/CPU ...\$280
386DXC-33 w/CPU ..\$450
486DXC-33 w/oCPU \$595

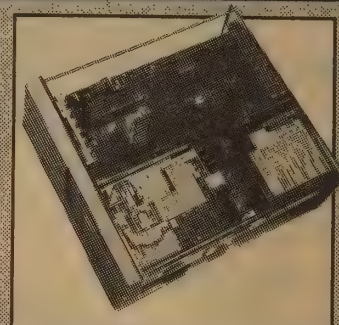
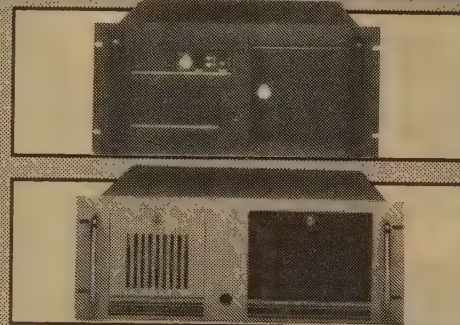
• Special slot configuration available

INDUSTRIAL 19" RACKMOUNT SYSTEM

	8 SLOT	12 SLOT	14 SLOT	18 SLOT	20 SLOT
286-12	\$780	\$860	\$970	\$1220	\$1310
386SXC-16	\$880	\$965	\$1040	\$1320	\$1410
386SXC-20	\$950	\$1020	\$1100	\$1390	\$1475
386DXC-33	\$1170	\$1220	\$1300	\$1580	\$1670
486DXC-33	\$1700	\$1820	\$1900	\$2210	\$2300

BASIC CONFIGURATION

- Passive Backplane Boards
- CPU Board w/ Processor
- Air Cooling Fan Subsystem
- 1:1 2HD/FD Controller Card
- 2MB Memory up to 32MB
- 5.25" 1.2MB FD
- 250W Power Supply
- 2S/1P I/O Card
- Custom Configuration is Available



PASSIVE BACKPLANE COMPUTERS

BASIC SYSTEM

286C-12\$375
386SXC-16\$480
386SXC-20\$540
386DXC-33\$640
436DXC-33\$1215

BASIC SYSTEM CONFIGURATION

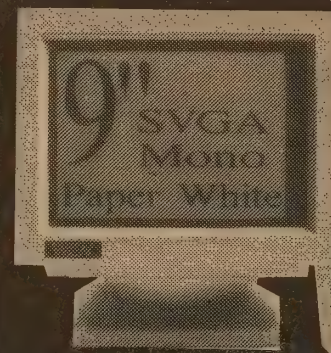
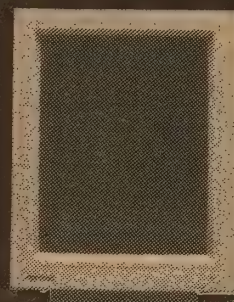
- 8 Slot Passive Backplane Board
- Single CPU Board & CPU
- 1MB Memory Installed
- 1:1 IDE 2HD/2FD Controller
- TEAC 1.2MB or 1.44MB FD
- 101 Enhanced Keyboard
- Baby AT Case w/200W P.S.
- Custom Configuration Available



KEY COMP

- Single Keyboard & Computer
- 386SX-25 Microprocessor
- AMI Bios
- 2MB RAM Exp. to 16MB
- 1.44MB 3.5" FDD
- 85MB HDD
- SVGA w/1MB
- MS-DOS 5.0
- MS-Windows 3.1
- 3 Button Mouse

\$880



MONITORS

• 9" SVGA Monochrome\$102
• 14" SVGA Interlaced\$260
• 14" SVGA Non-Interlaced\$300
• 15" VGA Mono Full Page\$250

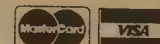
As a manufacturer we have to assure the highest quality products available anywhere. All of our products are carefully designed to exceed today's standards of excellence and provide years of reliable service.

**Multi-Micro
systems**

TEL: (408) 456-0333
(800)-875-0333
FAX: (408) 456-0366

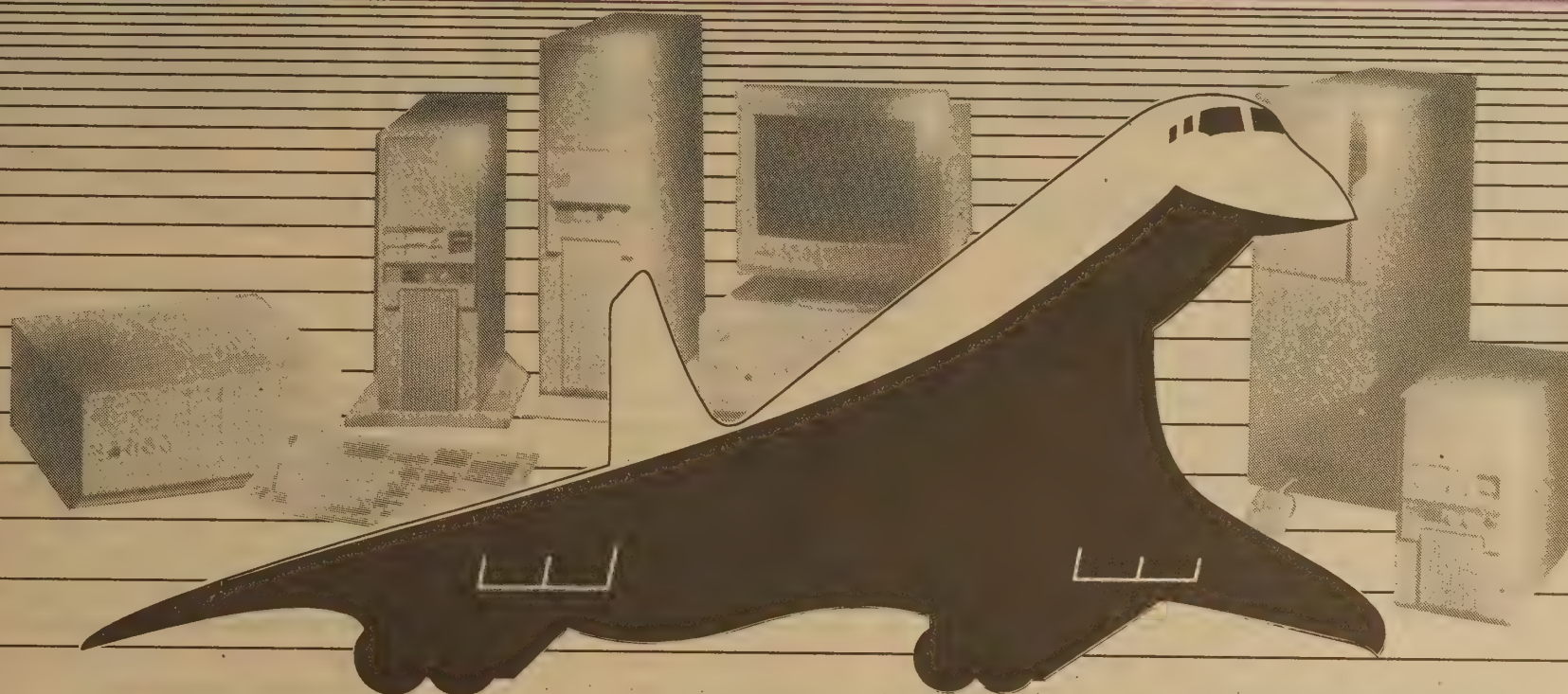
62 Bonaventura Drive • San Jose, CA 95134 • Mon-Fri: 9am-6pm

Terms & Conditions
Prices subject to change without notice. Not responsible for typos or errors. Prices based on cash. Please ask about products not listed in this advertisement.
1 year warranty on parts.



Your Satisfaction Matters

2 Year Parts 5 Years Labor On All Systems



386DX-40

130MB Drive VGA System

- AMD 80386SX processor
- AMI Bios
- 128K High-speed cache SRAM
- 4MB Fast-page mode 70ns RAM
- Math Co-processor socket
- Mitsumi 1.2 and 1.44MB Floppy Drive
- Maxtor 130MB Hard Drive
- Trident 16-Bit 256 Color SVGA Card w/1MB
- 2S/1P/G ports
- Mini-Tower Case
- 230W UL List Power Supply
- 14" .28 Interlaced SVGA Monitor (1024x768)
- 101 Enhanced Keyboard
- Landmark Speed Running at 66MHz

\$1020

486DX-33/50

240MB Drive VGA System

- Intel 80486DX co-processor
- AMI Bios
- 256K High-speed cache SRAM
- 4MB Fast-page mode 70ns RAM
- Teac 1.2 and 1.44MB Floppy Drive
- Quantum 240MB Hard Drive
- Diamond SpeedStar 24X True Color w/1MB
- 2S/1P/G ports
- Mini-Tower Case
- 230W UL List Power Supply
- 14" .28 Non-Interlaced SVGA Monitor (1024x768)
- 101 Enhanced Keyboard
- Landmark Speed Running at 151MHz/200+MHz

\$1600/1850

486-33/50 VESA Local Bus

240MB Drive VL System

- Intel 80486DX-33/50 processor (With 8K cache & Math Co-processor)
- AMI Bios
- 2 VESA Standard Local Bus
- 256K High-speed cache SRAM
- 8MB Fast-page mode 7ns RAM
- Teac 1.2 and 1.44MB Floppy Drive
- Quantum 240MB Hard Drive
- 32 Bit VESA Diamond Stealth 24 SVGA 1MB
- 32 Bit VESA IDE Controller
- 2S/1P/G ports
- Mid-Tower Case
- 230W UL List Power Supply
- 14" Viewsonic 6E SVGA Monitor (1024x768)
- Focus 2001 Keyboard
- Landmark Speed Running at 200MHz

\$2000/2250



Bondwell®

NOTEBOOK MODEL 486NC

- 486 SLC-25MHz
- 2MB RAM, up to 8MB
- 80MB Hard Disk
- 80386 Co-processor Socket
- 10" 640x480 LCD VGA Display
- Advanced Power Management
- Bundled ex. 1.44MB Floppy Drive
- Weight 5.0 lbs
- 6A-F Size Nicad Battery Pack
- DR-DOS 6.0
- Fax/Modem

\$1699

LOW PRICE - HIGH QUALITY - EXCELLENT SERVICE

MOTHERBOARDS w/CPU

386 Upgradable to 486	\$CALL
486DX-50 w/256K Cache	700
486DX-33 w/256K Cache	500
386DX-40 w/128K Cache	195
386DX-25/33	125/40

VIDEO ADAPTERS

QIC WinStar 24-bit 16.8M	
True Color w/1MB	\$99
Trident 16-bit SVGA w/1MB	60
Viewpoint VGA w/256K	25
Diamond SpeedStar 24X	165
Diamond Stealth w/1MB VRAM	220
Orchid Fahrenheit w/1MB VRAM	200
MGP Card	15

FLOPPY DRIVES / HARD DRIVES

1.22 5 1/4" Floppy Drive	\$55
1.44 3 1/2" Floppy Drive	50
20MB IDE	99
40MB IDE	165
80MB IDE	210
130MB IDE	255
170MB IDE	280

200MB IDE	360
340MB IDE	680
120MB Tape Drive	185
250MB Tape Drive	250

MONITORS

14" .28 Interlace w/Trident 1MB	\$310
14" .28 Non-Interlace w/Trident 1MB	350
15" NEC 3FGX/4FG	640/750
17" NEC 5FG	340/410
Nanao Monitor	CALL

FD/HD CONTROLLERS

IDE 2HD/2FD	\$15
IDE 2HD/4FD	50
IDE 2HD/2FD/2S/1P/1G	20
MFM 2FD/2HD	45
4FD For AT/XT	40
2FD For AT/XT	30

PRINTERS

Epson LQ 1070C	\$360
Fujitsu DL 3600	360
HP IIp+/IIIP	795/999
HP DeskJet 500/500C	399/600
HP DeskJet 550	720

Okidata OL400/OL800	599/1070
---------------------	----------

MISCELLANEOUS

AT I/O 2S/1P/1G	\$15
AT I/O 2S/1P/1G W61550CN Chip	70
2400 Int. Modem	40
96/24 Int. Fax/Modem	60
96/14.4K Int. Modem	250
9600 Int. Modem	220
QIC Mouse	35
Silver Mouse w/Pad	20
Track-ball	30
Logitech Scanner w/OCR	300

SOFTWARE

OS/2.0	\$90
MS Access 2.0	99
MS-Windows 3.1	80
MS-Word 2.0	285
MS-Excel 4.0	285
MS-Draw 2.0	120
Aldus Page-Maker 4.0	500
Lotus for Windows	330
Harvard Graphics 3.0	330

Shareware Available



Bondwell®

MODEL 386NCR \$1500

- 80386SXL, 33MHz CPU
- 80387SXL Co-Processor Socket
- 2MB RAM exp. to 8MB
- 2/5" 40MB Removable Cartridge HDDx2
- 1.44MB ext. Floppy Drive
- 640x480 Triple Supertwisted LCD
- Built-in 2400bps MNP5 modem
- Weight: 5.1 lbs. including Battery
- 2400bps MNP5, V.42 9600bps Class 2 Send/Receive Fax
- Carrying Case

386NB-2MB/60MB HD	\$1350
B-330SX - 2MB/60MB HD, 2400 Modem	\$1200
NTC 486DX-33-2MB/80MB HD	\$2090

Unlimited Storage

1 Year Warranty on all components purchased without system. Prices subject to change without notice.

PC TEN

Albany-Berkeley
1533 Solano Ave.
Berkeley, CA 94707
510/527-1388

Berkeley
6640 Telegraph Ave.
Berkeley, CA 94609
510/849-0829

San Leandro
1933 Davis St. #262
San Leandro, CA 94570
510/568-1688

DEALER INQUIRIES WELCOME

UNIX For Pig Latinists

Silly Things To Do With sed And grep

BY BENNETT
FALK

One recent Saturday, our old friend Hapless, dawdling over a cappuccino and the *San Francisco Chronicle*, noticed an item in L. M. Boyd's "Grab Bag" column. The item challenged readers to find words common to both English and Pig Latin.

It was an irresistible challenge to Hapless, who has spent most of his adult life examining words for patterns (however dubious their significance). He took out pencil and paper and leaned forward, poised to record the torrent of words he was sure to imagine shortly.

He was hampered, of course, by a generally cloudy recollection of the rules for turning English words into Pig Latin. Words beginning with con-

sonants were no problem: one simply appended "ay" to the initial consonants and moved this syllable to the end of the word. Thus the English word "nuisance" becomes "uisancenay" in Pig Latin. But what was to be done with words that began with vowels?

Hapless turned to the stylish couple at the next table and asked if they knew the rules for Pig Latin. He might as well have asked for spare change: they shifted uneasily in their seats, muttered something indistinguishable, and stared into their respective coffee cups.

A busboy a few feet away overheard the question and volunteered a rule for words beginning in vowels: simply add the suffix "hay" to the English word.

Bolstered by the busboy's generosity, Hapless explained the challenge of finding words in common between English and Pig Latin and ordered another coffee.

Half an hour later, with his paper full of scribbling, Hapless suddenly sat up straight and said in a loud, clear voice: "Hearsay!"

The busboy looked at him patiently and said, "Nice try, but 'hearsay' isn't a legitimate word in Pig Latin; all Pig Latin words begin with vowels."

Hapless thought about this, mentally transformed the word "shear" into "earshay," and conceded the point.

BUT WAIT!

He stared at the paper in front of him and had something like a revelation: he could use a

computer to do this. He was familiar with the UNIX conventions for manipulating regular expressions, and the rules for producing Pig Latin were simple enough. It must be possible to do this with utilities like sed or grep. He took out a fresh sheet of paper.

His first thought was to write an editing script to turn English into Pig Latin. This script had to do essentially three things: append an "h" to any word beginning with a vowel, move any initial consonants to the end of the word, and finally append the all important "ay."

Hapless decided to use the UNIX stream editor "sed" and to work with the UNIX spelling dictionary /usr/dict/words. Taking some time to think, Hapless wrote a five-line sed script:

```
/^([AEIOUaeiou])/s/$/h/g
:consonant
s/^\([^\AEIOUaeiou]\)[a-z]*\)/$/\2\1/g
/^([^\AEIOUaeiouy])/b consonant
s/$/ay/g
```

The first line starts with a regular expression (/^([AEIOUaeiou])/) that will match any lines of input that begin with vowels (either upper or lower case). The letters in square brackets are a character class; input containing any of these characters will match the regular expression. The caret (^) that precedes the character class restricts the expression to match only vowels at the beginning of a line. (Hapless knew that his input would be a list of words with one word per line.)

The second part of the first line (s/\$/h/g) is a command to add an "h" to the end of any line that matches the regular expression. (In the vocabulary of regular expressions, a dollar sign is used to indicate the end of a line in much the same way that a caret represents the beginning of a line.)

The second line of Hapless' script is just a label. In this case it indicates the beginning of the portion of the script that works on lines beginning with consonants.

The third line of the script is a complicated substitution command that identifies any line whose first character is a consonant and moves that consonant to the end of the line.

```
s/^\([^\AEIOUaeiou]\)[a-z]*\)/$/\2\1/g
```

The first caret and the bracketed character classes in this command work much as they did in the first line of the script. The second caret (inside the brackets) means something different. Used inside a character class definition, a caret inverts the definition: the class consists of any characters except those listed in the brackets. Hapless, trusting that there would be no numbers or symbols in his input, decided to match consonants by simply inverting a list of vowels.

The other interesting feature of this command is the use of parens ("(" and ")") to define fields in the input. Hapless isolated the first character of each line as one field \1([^\AEIOUaeiou]\) and the rest of the line \2([a-z]*\)) as another. The right side of the command (/^\2\1/g) simply reverses these two fields, moving the initial consonant to the end of the line.

The next line of the editing script checks results of the substitution. If the edited line begins with a consonant the editor branches to the label "consonant" and repeats the substitution. When an edited line fails this test, it drops through to the last line of the script (s/\$/ay/g) which appends an "ay" to the end of the edited line.

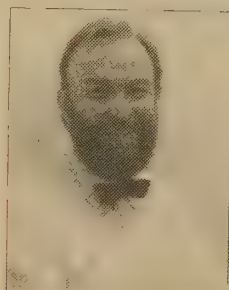
Hapless bundled up his script, paid for his coffee, and hurried home to login and turn /usr/dict/words into Pig Latin. He typed the script up in a file he called "eng_to_pl" and then ran the command:

```
sed -f eng_to_pl /usr/dict/words | more
```

A NEW PROBLEM

To his great delight the screen filled with a single column of well-formed Pig Latin. He scrolled gleefully through several screens of freshly minted gibberish, but his elation soon wore thin. He now had as much Pig Latin as English, but he was no closer to identifying the words common to both.

After frowning at the screen for a while, Hapless decided to approach the problem in a different way: he would first find all the words in the spelling dictionary that might possibly be words in Pig Latin. It would be an



Copyright © 1993 by Bennett Falk. All rights reserved. Bennett Falk lives in the Bay Area, writes when he can, and hopes for the best. He works for Sybase, but the opinions and attitudes expressed are his own.

Customize To Meet Your Exact Needs

If you don't see it, call us we just might have it or at least can get it!

CALL (415) 615-9123

MONTHLY SPECIALS

NOVELL.
Authorized Reseller

Comet Micro VLB 486DX2-66MHz
486DX2-66MHz with 256K Cache
Intel 486DX2-66MHz Processor Inst.
Full Size Tower with 250W Power Supply
US Made 486DX2 66MHz 256K Sys. Bd.
4MB RAM 70ns Installed, Exp. to 32MB on Bd.
Teac 1.2MB and 1.44MB Floppy Drive
Conner 204MB IDE HD 256K Cache 12ms
IDE 2 Hard/ 2 Floppy Drive Controller
2 Serial / 1 Parallel / 1 Game Ports
Promise VLB IDE Host Adapter
Diamond Stlth 24 VLB Adpt. w/1M RAM
NEC 4FG 15" .28mm SVGA Mon. 72Hz
Keytronic 101K Enhanced Keyboard

\$2,950.00

EISA VESA Local Bus System, Please Call

Orchid VESA Local Bus 486-50MHz
486DX-50MHz with 256K Cache
Intel 486DX-50MHz Processor Installed
Full Size Tower with 250W Power Supply
Orchid VLB 486-50MHz w/ 256K Cache Sys Bd
4MB RAM 70ns Installed, Exp. to 32MB on Board
Teac 1.2MB and 1.44MB Floppy Drive
Conner 204MB IDE HD 256K Cache 12ms
IDE 2 Hard/ 2 Floppy Drive Controller
2 Serial / 1 Parallel / 1 Game Ports
Orchid VLB IDE Host Adptr, 8mbps Acc. Time
Orchid Fahrenheit VLB SVGA Adpt w/1M RAM
Sony 1340 14" .25mm SVGA Monitor 72Hz
Keytronic 101K Enhanced Keyboard

\$2,600.00

Customize System, Please Call

Comet Micro ISA 486 33MHz
486DX 33MHz with 256K Cache
Intel 486DX-33MHz Processor Installed
Full Tower Case with 250W Power Supply
NICE 486DX-33MHz w/ 256K Cache Sys. Bd.
4 MB RAM 70ns, Exp. to 32MB on Board
Teac 1.2MB and 1.44MB Floppy Drive
Maxtor 213MB IDE Hard Disk 15ms
IDE 2 Hard/2 Floppy Drive Controller
2 Serial / 1 Parallel / 1 Game Ports
Diamond SpeedStar 24x SVGA Adpt. Hi-Color
Sampo AlphaScan 14" SVGA 72Hz Monitor
Keytronic 101K Enhanced Keyboard

\$2,050.00

DX2 66MHz System, Please Call

System Boards

All system board come with CPU & no RAM
Orchid SuperBoard 486 Local Bus 256K **CALL**
Micronics 486DX2-66MHz Local Bus 256K 1350
Micronics 486DX 33MHz Local Bus 256K 950
NICE US Made 486DX2-66MHz Super EISA VLB 1300
NICE US Made 486DX Mini EISA VLB 256K **CALL**
NICE US Made 486DX ISA VLB 256K Cache 595
Vega US Made 486DX-33/2-66MHz VLB 256K **CALL**
Comet 486DX 33MHz ISA 128K Cache 495
Comet 486DX 33MHz ISA 64K Cache 295
Comet 386 33MHz 128K RAM Cache 195
Comet 386SX 25MHz with CPU 150

Hard Drives

Conner CP3000 40MB 28ms 169
Conner CP30084 84MB 19ms 229
Conner CP30104 120MB 17ms 279
Conner CP30174E 170MB 17ms 329
Conner 30204 204MB 256K Cache 12ms 399
Maxtor 2585AT 85MB IDE 15ms 249
Maxtor LXT7120A 130MB 15ms 299
Maxtor LXT7213A 210MB 15ms 389
Maxtor LXT340A 340MB 13ms 599
Maxtor LXT535A 535MB 12ms 899
Maxtor 1.02GB Panther Drive SCSI 13ms 1549
Maxtor 1.7GB Panther Drive SCSI 13ms 1795

Fujitsu Hard Drives: 5 Year Warranty

Fujitsu M2624 520MB IDE 3.5" 11ms 949
Fujitsu M2624 520MB SCSI 3.5" 11ms 989
Fujitsu M2266SA 1.2GB SCSI 5.25" 14ms 1495
Fujitsu M2652S 2.0GB SCSI 5.25" 11ms 2395
Quantum ELS127AT 127MB IDE 15ms 305
Quantum LPS240AT 244MB IDE 256K Cache 449

Floppy Drives

Teac 5.25" 1.2MB Floppy Drive 60
Teac 5.25" 360K Floppy Drive 60
Teac 3.5" 1.44MB Floppy Drive 60
Teac Dual 1.2 & 1.44MB Floppy Drive 149

Power Supplies (KingsPao)

150W XT Size Power Supply 49
200W XT Size Power Supply 59
250W AT Size Power Supply for Desktop 59
230W PS2 Size Power Supply 59
250W AT Size Power Supply for Tower 69
300W AT Size Power Supply for Tower 99

Monitors

12" Samsung Amber Monochrome Monitor 105
14" Amber Monochrome Monitor 115
14" Paper White VGA Monochrome Monitor 135
14" Addonics VGA 640x480 Monitor 245
14" Addonics SVGA 1024x768 .28mm Monitor 299
14" Addonics SVGA 1024x768 .28mm NI Monitor 335
14" ViewSonic 6E SVGA 1024x768 NI Monitor 350
14" Sampo AlphaScan 1024x768 72Hz NI Monitor 385
14" Sony 1340 SVGA Monitor .25mm NI Monitor 649
15" Sampo AlphaScan 1024x768 70Hz NI Monitor 495
15" ViewSonic 6FS 1024x768 72Hz NI Monitor 625
15" NEC 4FG 1024x768 .28mm NI Monitor 759
17" Sampo AlphaScan 1024x768 70Hz NI Monitor 820
17" Sony 1604 1024x768 70Hz .25mm NI Monitor 1020
17" ViewSonic 7 1280x768 .28mm NI Monitor 1055
17" Nanao F550i 1280x1024 .28mm 75Hz Monitor 1100
17" Seiko CM1760 1280x1024 .26mm Monitor 1100
17" NEC 5FG 1280x1024 74Hz .28mm Monitor 1350
20" Sampo AlphaScan 1280x1024 .31mm Monitor 1300
20" ViewSonic 8 1280x1024 .31mm NI Monitor 1650
21" Toshiba P21CROO 1280x768 .31mm Monitor 2100
21" NEC 6FG 1280x768 74Hz .28mm Monitor 2650

Multimedia

Media Vision - Pro 16 Multimedia System 949
Pro Audio Spectrum 16 Sound Card 195
NEC CDR84 Internal CD-ROM 280ms 555
Sony CDU535 380ms CD-ROM w/ Sony Interface 330

Scanners

ScanPlus 300dpi B&W Scanner 350
ScanPlus 600dpi 24bit Color Scanner 675
Umax UC630 600dpi 24bit Flatbed Color Scanner 1199

Printers

Panasonic KXP4450i 11ppm Laser Printer 1095
Panasonic KXP4410 5ppm Laser Printer 649
Panasonic KXP4430 5ppm PCL5 Laser Printer 895
HP LaserJet 4, 600dpi, 2MB, 8ppm Laser Printer 1400
RAM Upgrade Board w/1MB for KXP4420/4450i 105
RAM Upgrade Board w/1MB for KXP4410/4430 125
RAM Upgrade Board w/1MB for HP II/III/P 95
RAM Upgrade Board w/ 1MB for Oki OL400 Laser 95

Tape Backups

Colorado 250MB Ext. Parallel Port Tape Backup 439
Colorado 120/250MB Internal Tape Backup 209/259
Colorado 2.4GB Internal Tape Backup 18MB/ min 1195

Video Adapters

ATI Graphic Vantage 1MB & 400dpi Mouse 205
ATI Graphic Ultra + 1M/2MB & 400dpi Mouse 325/375
ATI Ultra Pro 1M/2M VRAM & 400dpi Mouse **CALL**
Diamond SpeedStar 24x 1MB RAM & HiColor 179
Diamond Stealth 24 VLB 1MB RAM Accelerator 199
Diamond Stealth Pro VLB 1MB/2MB Accelerator 349/449
Diamond Viper VLB 1MB/2MB VRAM Accelerator 425/525
Hercules Graphite 1MB VRAM Accelerator 375
Orchid Fahrenheit 1280 24Bit Color 1MB VRAM 240
Orchid Fahrenheit VLB 1MB Video Adapter 179
Accumos Windows Accelerator 16bit w/ 512K 70
Accumos Windows Accelerator 16bit w/256K 49
Trident 8900 Chip Set 1MB SVGA Adapter 75
#9 GXi Video Adapter **CALL**
#9GXE Level 10/11/12 Graphics for Windows **CALL**

Input Devices

KeyTronic / Mitsumi 101K Enhanced Keyboard 45/40
Northgate 101 or 102 / Ultra Enhanced Keyboard 79/99
Logitech 3 Button Serial Mouse 45
Logitech 400dpi Serial/Bus Mouse Man 68/70
Microsoft 400dpi Serial/Bus Mouse 80
Summa Sketch II Plus 12x12 w/4 Button & Stylus 269

Controllers & Adapters

2 Serial, 1 Parallel, 1 Game Ports Card 18
IDE 2 Hard/2 Floppy drives Adaptor 18
IDE with 2 Serial, 1 Parallel, 1 Game Ports 30
Kouwell 2S/1P/1G w/ HiSpeed 16550 UART Chip 60
Ultrastor ESDI Controller w/32K Buffer 169
Adaptec 1522/1542B Kit SCSI Host Adapter 159/259
Adaptec 1742 EISA SCSI 32Bit Adapter Kit 449
Promise IDE W/ 512K Cache Upgradable to 8.5MB 155
Promise IDE W/ OMB Cache Upgradable to 16MB 155
Promise SCSI W/ OMB Cache Upgradable to 16MB 255
Promise IDE VLB Cache Host Adapter. **CALL**

Modems

Pratical 14,400 V.32 bis External Fax/Modem 395
Intel SatisFAXtion Modem 200 96/24 Fax + Modem 315
Intel SatisFAXtion Modem 400 96/24 Fax + Modem 415
Intel SatisFAXtion Modem 400E 96/144 Ext. Modem 495
Intel SatisFAXtion 14.4 V.32 .42 External Modem 495
GVC 14,400 V.32 V.42 Int/ Ext. Fax/ Modem 275/295
GVC 9600 Baud Modem Int / External 195/205
Complete PC 96/24 Fax/Modem for Windows 105
2400 Baud Modem w/ Software Internal/ External 55/75

NO SURCHARGE ON CREDIT CARDS

Comet Micro System

1301 Grandview Drive

South San Francisco, CA 94080

Phone: (415) 615-9123 Fax: (415) 615-0287

MON-FRI 9am to 6pm, SAT 10am to 5pm



TERMS & CONDITIONS

Prices subject to change w/o notice
Not responsible for typos/errors
No surcharge on credit cards on
advertised prices only
Please call for items not listed
One year warranty on all parts
Three years warranty on labor
Dealer & Quantity pricing available

Best Prices With Free Installation,
Services & Delivery
For Systems Only

We Offer UNIX SOLUTIONS

SCO
THE SANTA CRUZ OPERATION

Authorized Reseller SCO UNIX



We're the leading UNIX consulting company. When it comes to UNIX nobody offers more than Ramcomp at guaranteed lowest prices! We offer the widest selection of UNIX system & application software.

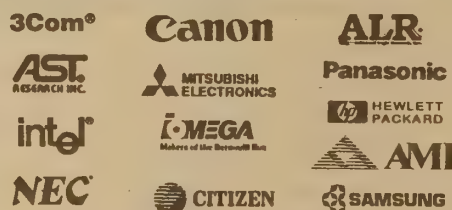
UNIX SHOPPING MADE EASY

SCO UNIX OS (2 user)	495	SCO Portfolio	495
SCO UNIX OS (3+)	895	SCO TCP/IP Dev Sys.	350
SCO UNIX Dev Sys	895	SCO TCP/IP RTS Unltd.	495
SCO X Window Complete.	495	SCO NFS	495
SCO X Windows RTS	295	SCO ODT Personal sys.	995
SCO X Windows Dev	295	SCO ODT Server upg	1188
SCO VP/ix Unltd (3+)	650	SCO ODT Dev sys	1295
SCO MPX	695		

Let us create an environment for your organization where Unix is a way of life, providing Multi-User, Multi-Tasking power of Unix as your solution. Our services include the following:

- Unix Installation
- Unix Complete Training
- Custom Software Development in Oracle & Foxplus
- Unix Technical Support & Advice

We carry the Following
Brand Names and Ask For
Others You Don't See:



NOVELL NETWORKING SOLUTIONS In Local Area & Wide Area Networks

NEW INSTALLATIONS

Free evaluation of your needs & site inspection. Turnkey jobs including installation of cabling system. Ask for quotes.

UPGRADING THE EXISTING INSTALLATION

Adding storage to the server, changing the network architecture or topology. Installing a later version of Netware. (Free back up and restoration of data in any upgrade.)

EXPANDING THE EXISTING NETWORK

Adding a server, adding new segments using repeaters, bridges & routers, etc.

Use the knowledge of our Netware engineers to route your bytes to their destination through the safest and most cost effective path without compromising speed and performance.

Repair and upgrading, revamping on site for all computers
Minimum Charges

690 Market Street - Suite 515
San Francisco, CA 94104
Hours: Mon-Friday 9 A.M.-6 P.M.
Sat - Noon-5 P.M.



RAMCOMP

The
Computer People...

415/986-5125 • Fax - (415) 986-3677

BUSINESS SOLUTIONS

easy enough thing to identify words beginning with vowels and ending in "ay," but not all of these words would be Pig Latin. The putative Pig Latin words would have to be parsed back into English to establish their legitimacy. His mind began to boggle and he decided to take one step at a time.

Selecting words beginning with vowels and ending in "ay" turned out to be easy. Hapless did this with a single grep command and put the output in a file named "temp":

```
grep '^([AEIOUaeiou])[a-z]*ay$' /usr/dict/words
> temp
```

Hapless soon found that treating these candidate words as Pig Latin and trying to turn them back into English was not so elegant a process as turning English into Pig Latin. It was easy enough to get rid of the trailing "ay," but the matter of deciding how many letters needed to be moved back to the beginning of the word was tricky. (He remembered with some embarrassment the "Hearsay" incident.)

Hapless decided that his program would move consonants from the end of each candidate word to its beginning one by one until a vowel was encountered at the end of the word.

These transformations would produce candidate English words. Most of these candidates would be nonsense, but they would all be saved in a file for future reference. The script to turn candidate Pig Latin words into candidate English words looked like this:

```
s/ay$/
:begin
h
s/^([A-Z]*)\([h]\)$\1/w temp.eng
g
s/^([A-Z]*)\([^[AEIOUaeiou])\)$\2\1/w temp.eng
/[^AEIOUaeiou]$/b begin
```

This script uses two new features of sed. To allow for Pig Latin created from English words beginning with vowels, Hapless had to be careful with any word ending in "hay." Two transformations might be needed for any such word: one which dropped the h entirely and another which treated the h as a letter in the English word.

Immediately after the "begin" label, Hapless used the sed command "h" to copy the line into a holding area maintained by sed. The trailing h was then dropped and the word copied to the temporary file for candidate English words. The "g" command retrieved the original version of the line from the hold space and moved the trailing consonant to the beginning of the word.

The other feature is the "w temp.eng" construction which writes changed lines to the file temp.eng.

Once a list of candidate English words had been produced, grep would then be used to search /usr/dict/words for each candidate. Legitimate English words would be matched, and grep would return a "successful" status.

The successful candidates would then be turned into Pig Latin (using the "eng_to_pl" script Hapless wrote at the cafe), and grep would be used once again to locate the Pig Latin word in /usr/dict/words. Any word that survived this series of transformations was a word common to both English and Pig Latin.

Hapless wrote a shell script to run the entire series of greps and sed's (See Figure 1), and sat back to enjoy the product of his labors. The script ran for a while.

The UNIX spelling dictionary contains 25,487 words in all. Hapless was chagrined to find that there were only nineteen words in the dictionary that conformed to the rules for legitimate Pig Latin words. These nineteen words produced thirty-nine candidate English words, and of these thirty-nine candidates, only one was common to both English and Pig Latin: ashtray.

"Perhaps," thought Hapless, "I need a bigger dictionary." ■

Figure 1

Master Script:

```
# !/bin/csh

grep '^([AEIOUaeiou])[a-z]*ay$' /usr/dict/words > temp

sed -i pl_to_eng temp > /dev/null

foreach word ('cat temp.eng')
  grep -s '^$word$' /usr/dict/words
  if ($status == 0) then
    set pl_word = 'echo $word | sed -i eng_to_pl'
    grep -e '^$pl_word$' /usr/dict/words
  endif
end
```

pl_to_eng:

```
s/ay$/
:begin
h
s/^([A-Z]*)\([h]\)$\1/w temp.eng
g
s/^([A-Z]*)\([^[AEIOUaeiou])\)$\2\1/w temp.eng
/[^AEIOUaeiou]$/b begin
```

eng_to_pl:

```
/^[AEIOUaeiou]/ s/$/h/g
:consonant
s/^([^[AEIOUaeiou])\([a-z]*\)$\2\1/g
/[^AEIOUaeiou]/ b consonant
s/$/ay/g
```


PC WAREHOUSE

80 Locations Nationwide

You'll come for the price
You'll stay for the service

NOVELL Networks

Service Consulting
Installation

SONY LASERLIBRARY External CD-ROM Package

*Sound Blaster Pro
*Interface
*6 CD Titles
*SONY Speakers
\$819
Model 7305

380ms

CD - ROM

280ms

SONY 31A Int.(490ms) \$299
SONY 535 Bus Int. \$329
SONY 541 SCSI Int. \$429
SONY 7211 SCSI Ext. \$549

NEC 84 SCSI Int. \$549
NEC 74 SCSI Ext. \$629
Texel SCSI Ext 260ms \$529
Adaptec SCSI CTL \$109

Creative Labs

*Sound Blaster.....\$99
*Sound Blaster Pro Basic..\$159
*Video Blaster.....\$349
*CD-ROM Upgrade Kit...\$369
*Multimedia Upgrade...\$529

IBM PS/ValuePoint

386SLC-25 : 80MB/\$949, 170MB/\$1149
486SX-25 : 80MB/\$1229, 170MB/\$1449
486DX-33 : 120MB/\$1619, 212MB/\$1819
486DX2-66 : 212MB/\$2459

Monitor
14" 6312..\$389
14" 6314..\$519
15" 6319..\$639

* 4 - 32 MB RAM
* IBM Mouse
* SVGA 1024 1MB
* 5 Expansion Slots
* Norton AntiVirus 2.1
* One-year On-side Warranty

Kenitec NoteBook

Special : SX-20/80MB..\$969, 120MB..\$1199

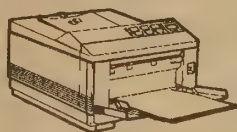
	60 MB	80 MB	120 MB	200 MB
SX-25	\$1149	\$1199	\$1299	\$1599
486SLC-25	\$1439	\$1499	\$1649	\$1899

LaserJet 4



*8 Pages per Minute
*600dpi High Resolution
*2-32MB Memory
*45 Scalable Fonts
*HP PCL 5 Language

\$1379



* We Carry Full HP Printer Line *

Memory Upgrade :

1MB/2MB for IIp+/IIIP/III/IIID.....\$69/\$99
2MB/4MB for HP IIISi/4.....\$99/\$169
Appletalk/Font Cartridge.....\$Call

Toner :

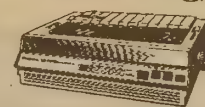
IIp/IIp+/IIIP.....\$69
II/III/IIID.....\$79
4.....\$99
IIISi.....\$119

DeskJet 500.....\$389
DeskJet 500C.....\$499
DeskJet 550C.....\$689
LaserJet IIp+.....\$769
LaserJet IIIP.....\$939
LaserJet IIID.....\$2289
LaserJet IIISi.....\$3299

LaserJet 4M.....\$1949
ScanJet IIp.....\$829
ScanJet IIc.....\$1399
PaintJet.....\$699
PaintJet XL.....\$1669
PaintJet XL300.....\$2269
PaintJet XL300/PS.\$3299

Postscript/Auto.....\$349/\$479
IIp/IIIP/II/III Legal Tray.....\$69
IIp/IIIP Env Tray.....\$79
III Env Tray.....\$79
IIID Env Feeder.....\$269
Lower Cassette.....\$149
Fax/Plotter.....\$Call

KX-P1123.....\$199
KX-P1124i.....\$279
KX-P1624.....\$349
KX-P2123.....\$239
KX-P2124.....\$319
KX-P2624.....\$379



Colorado Trakker
Parallel Tape Backup
120MB \$359
250MB \$419

386SX-25/33

*386SX-25 / 33 CPU
*1-16MB RAM (70ns)
*AMI BIOS
*Teac 1.2 or 1.44 FDD
*IDE FD/HD CTL
*2S\1P\1G Ports
*101-key Keyboard

\$289/\$309

1 Year Parts / 2 Years Labor Warranty

386 - 33/40

*386DX-33/40 CPU
*1-32MB RAM (70ns)
*128KB CACHE
*AMI BIOS
*Teac 1.2 or 1.44 FDD
*IDE FD/HD CTL
*2S\1P\1G Ports
*101-key Keyboard

\$359/\$379

486 - 33

*486DX-33 CPU
*1-32MB RAM (70ns)
*256KB CACHE
*AMI BIOS
*Teac 1.2 or 1.44 FDD
*IDE FD/HD CTL
*2S\1P\1G Ports
*101-key Keyboard

\$489 w/Cyrix CPU
\$679 w/Intel CPU

486 - 33

*486DX-33 CPU
*1-32MB RAM (70ns)
*256KB CACHE
*AMI BIOS
*Teac 1.2 or 1.44 FDD
*IDE FD/HD CTL
*2S\1P\1G Ports
*101-key Keyboard

\$719 VESA

486 - 50

*486DX-50 (not DX2) CPU
*1-32MB RAM (70ns)
*256KB CACHE
*AMI BIOS
*Teac 1.2 or 1.44 FDD
*IDE FD/HD CTL
*2S\1P\1G Ports
*101-key Keyboard

\$849 ISA
\$889 VESA

486 - 66

*486DX2-66 CPU
*1-32MB RAM (70ns)
*256KB CACHE
*AMI BIOS
*Teac 1.2 or 1.44 FDD
*IDE FD/HD CTL
*2S\1P\1G Ports
*101-key Keyboard

\$949 ISA
\$989 VESA

High Quality, Full Compatibility And Reliability Are Guaranteed!

1/26/93

Monitors

NEC 4FG.....\$749 Arche .28 SVGA.....\$285
NEC 4D 16".....\$599 Arche Non-Interlaced.....\$319
SONY 1304s.....\$569 NEC 5FG.....\$1339 12"/14" Mono.....\$89/\$119
SONY 1430.....\$629 NEC 6FG.....\$2399 14" paper white SVGA.....\$169
SONY 1604s.....\$999 Viewsonic 6E.....\$359 Nanao F550i.....\$1139
SONY 1936.....\$1999 Viewsonic 6FS.....\$599 Nanao T560i.....\$1729
NEC 3FGx.....\$649 Viewsonic 7.....\$999 Nanao T660i.....\$2569

Video Adapters

OAK 800X600 VGA.....\$39
Trident 1024 1MB.....\$69
Tseng Labs 1024 1MB.....\$99
Genoa VLB 1MB.....\$169
Tseng Labs VLB 1MB.....\$149

ATI GraphicUltra + 1MB/2MB.....\$309/\$349
ATI GraphicUltra Pro 2MB/VLB.....\$469/\$479
Orchid ProDesigner IIs 1MB.....\$129
Orchid Fahrenheit 24X 1MB.....\$199
Orchid Fahrenheit VA/VLB 1MB.....\$249
Diamond Speedstar 24X 1MB.....\$179
Diamond Stealth VLB 1MB.....\$199

Hard Drives

Conner/IBM 40MB...\$149/159
Conner 80MB IDE.....\$209
Conner 120MB IDE.....\$259
Conner 170MB IDE.....\$299
Conner 212MB IDE.....\$379
Maxtor 130MB IDE.....\$269

Maxtor 213MB IDE.....\$369
Maxtor 340MB IDE.....\$599
Maxtor 535MB IDE.....\$909
Maxtor 213MB SCSI.....\$389
Maxtor 340MB SCSI.....\$619
Maxtor 535MB SCSI.....\$949
Toshiba 1.2GB SCSI.....\$1529

Modems

Zoltrix 2400 Int.....\$49
Zoltrix 24/96 Fax/Modem.....\$79
Zoltrix 96/96 Fax/Modem.....\$249
Intel Satisfaxtion 200.....\$299
Intel Satisfaxtion 400.....\$399
Intel Satisfaxtion 400e.....\$469

Scanners

HP ScanJet IIp w/IF.....\$829
HP ScanJet IIc w/IF.....\$1399
Microtek 1200dpi.....\$849/\$1089
Logitech Scanman32.....\$149
Logitech Scanman256.....\$249
Logitech Scanman256w/OCR.....\$299

Misc

SummaSketch II 12x12.....\$299
NEC SilentWriter 95.....\$1389
NEC SilentWriter 97.....\$1789
Tape Backup.....\$Call
Memory.....\$Call
Software.....\$Call

Sunnyvale

1082 E. El Camino, #3
(Btw Lawrence & Henderson)
(408) 985-1309

MON-FRI 9AM-7PM

SAT 10AM-5PM

Financing Available
Corporate Inquiry Welcome



Prices & Specs
Subject to Changes
w/o Notice
Advertised Prices
Based On 2%
Cash Discount

Palo Alto

454A California Avenue
(Btw El Camino & Alma)
(415) 321-9288

Are You Suffering From Computer Anxiety?



- Should I buy ISA, EISA or VESA?
- Are there any Standards for Local Bus?
- Has the true 50MHz VESA Local Bus been standardized yet? Is it safe to buy?
- What the heck is "Bus Mastering"?
- Does my system support it?
- Is there a Local Bus Caching Controller?
- Do all hard drives support the Local Bus?

WHO CAN HELP ???

Call **101** before you get to this advanced stage where there is no going back.

VESA STANDARDS:

RECOMMENDED:

Using a maximum of TWO VESA Expansion Slots for plug-in "External" Local Bus Cards, such as Video Cards, Caching Controllers... etc., on the motherboard that are:

- Unbuffered!
- Run at 33MHz (DX2/66MHz)!

NOT RECOMMENDED:

Having any VESA Expansion Slots (Buffered or Un-Buffered) for plug-in "External" Cards on a true 50MHz Mother Board!

MICRONICS VESA VL-BUS Intel 66MHz 486DX2 CPU

Made in USA

- 66MHz Intel 486DX2 CPU
- 8MB RAM, 256K Cache
- 240MB Quantum ProDrive 256K Cache 11ms
- 32-Bit VESA Integrated Local Bus IDE Interface
- 32-Bit ATI Ultra Pro Local Bus 1MB VRAM
- NEC 3FGX 15" (or MAG 15" MX15F) Monitor
- 1.2 and 1.44 High Density Floppy Drives
- Medium Tower Case 250W PS Dual Fans
- 101 Keytronics Keyboard
- 2-VESA Local Bus and 6-ISA Slots

\$2995

MICRONICS VESA VL-BUS Intel 66MHz 486DX2 CPU Ultra Store VESA SCSI-2 Controller

Made in USA

- 66MHz Intel 486DX2 CPU
- 8MB RAM, 256K Cache
- 210MB Maxtor SCSI-2 64K Cache 14ms
- 32-Bit VESA SCSI-2 Local Bus Ultra Store Bus Master Controller-10MBsec
- 32-Bit ATI Ultra Pro Local Bus 1MB VRAM
- NEC 3FGX 15" (or MAG 15" MX15F) Monitor
- 1.2 and 1.44 High Density Floppy Drives
- Medium Tower Case w/ 250W PS Dual Fans
- 101 Keytronics Keyboard
- 2-VESA Local Bus and 6-ISA Slots

\$3295

MICRONICS VESA VL-BUS Intel 33MHz 486DX CPU

Made in USA

- 33MHz Intel 486DX CPU
- 4MB RAM, 64K Cache
- 122MB Quantum ProDrive 256K Cache 11ms
- 32-Bit VESA Integrated Local Bus IDE Interface
- 32-Bit ATI Ultra Pro Local Bus 1MB VRAM
- 14" SVGA .28dp NI Monitor
- 1.2 and 1.44 High Density Floppy Drives
- Medium Tower Case w/250W PS
- 101 Keytronics Keyboard
- 2-VESA Local Bus and 6-ISA Slots

\$2075

ORCHID VESA VL-BUS Intel 50MHz 486DX2 CPU

Made in USA

- 50MHz Intel 486DX2 CPU
- 8MB RAM, 256K Cache
- 210MB IDE Hard Drive 13ms with 64K Cache
- 32-Bit VESA Local Bus IDE Controller
- 32-Bit Orchid Fahrenheit VLB 1MB RAM
- 14" ViewSonic 6E NI .28dp Monitor
- 1.2 and 1.44 High Density Floppy Drives
- Medium Tower Case w/230W PS
- 101 Keytronics Keyboard
- 2-VESA and 6-ISA Slots

\$2095

MYLEX EISA-VESA Intel 66MHz 486DX2 CPU

Made in USA

- 66MHz Intel 486DX2 CPU
- 8MB RAM up to 128MB, 256K (AWB) Cache
- 210MB DE Hard Drive 13ms 64K Cache w/RIDE*
- 32-Bit VESA Local Bus IDE Controller
- 32-Bit VESA Local Bus Stealth 24 VLB 1MB VRAM (S3)
- 14" ViewSonic 6E NI .28dp Monitor
- 1.2 and 1.44 High Density Floppy Drives
- Full-Tower Case w/300W PS Dual Fans
- Integrated 2 Serial and 1 Parallel I/O Ports
- 101 Keytronics Keyboard
- 2-VESA and 4-EISA/ISA Bus Mastering Slots
- Easy to Upgrade ZIF Socket
- Rapid Integrated Device Electronics

\$2895

EISA SCSI-2 File Server Intel True 50MHz 486DX CPU

Made in USA

- 50MHz Intel 486DX CPU
- 16MB RAM, 256K Cache
- 535MB SCSI-2 Hard Drive 12ms
- Adaptec 1742 SCSI-2 EISA Controller
- SpeedStar 24X True Color 1MB
- 14" SVGA NI .28dp Monitor
- 1.2 and 1.44 High Density Floppy Drives
- Full-Tower Case w/300W PS Dual Fans
- 2 Serial and 2 Parallel Ports
- 101 Keytronics Keyboard
- 8 32-Bit EISA Slots

\$3595

SPECIAL

GUARANTEE TO BEAT ANY PRICE • 1 YEAR PARTS WARRANTY • LIFE-TIME LABOR WARRANTY

486DX/50MHz 256K

- Intel 486DX/50MHz Motherboard
- 256K Static Cache RAM 20ns
- 8MB 60ns RAM expandable to 64MB
- 210MB IDE Hard Drive 15ms
- 1.2 and 1.44 Floppy Drives
- ViewSonic 6E Monitor, 14" Non-int.
- Diamond Stealth w/1MB VRAM S3 (fast)
- Mid-tower Case w/230w PS

\$2095

486DX2/66MHz 256K

- Intel 486DX2/66MHz Motherboard
- 256K Static Cache RAM 20ns
- 4MB RAM 60ns up to 64MB
- 130MB IDE Hard Drive 15ms
- 1.2 and 1.44 Floppy Drives
- 14" SVGA (1024x/68) Color Monitor
- Super VGA Card w/512K RAM
- Mini-tower Case w/200w PS

\$1695

Add \$300 for EISA

486DX/50MHz 64K

- Intel 486DX/50MHz Motherboard
- 64K Static Cache RAM
- 4MB RAM 60ns up to 32MB
- 130MB IDE Hard Drive 15ms
- 1.2 and 1.44 Floppy Drives
- 14" SVGA (1024x/68) Color Monitor
- Super VGA Card w/512K RAM
- Mini-tower Case w/200w PS

\$1495

Add \$275 for EISA

486DX/33MHz 256K

- Intel 486DX/33MHz Motherboard
- 256K Static Cache RAM
- 8MB RAM 70ns up to 32MB
- 210MB IDE Hard Drive 15ms
- 1.2 and 1.44 Floppy Drives
- 14" SVGA (1024x/68) Color Monitor
- Super VGA Card w/1MB RAM
- Mini-tower Case w/200w PS

\$1595

Add \$250 for EISA

486DX/33MHz 64K

- Intel 486DX/33MHz Motherboard
- 64K Static Cache RAM
- 4MB RAM 70ns up to 32MB
- 130MB IDE Hard Drive 15ms
- 1.2 and 1.44 Floppy Drives
- 14" SVGA (1024x/68) Color Monitor
- Super VGA Card w/512K RAM
- Mini-tower Case w/200w PS

\$1299

486SX/25MHz 64K

- Intel 486SX/25MHz Motherboard
- 64K Static Cache RAM
- 4MB RAM 70ns up to 32MB
- 105MB IDE Hard Drive 16ms
- 1.2 and 1.44 Floppy Drives
- 14" SVGA (1024x/68) Color Monitor
- Super VGA Card w/512K RAM
- Mini-tower Case w/200w PS

\$1050

386DX/33MHz 64K

- 386DX/33MHz Motherboard
- 64K Static Cache RAM
- 4MB RAM 70ns up to 32MB
- 105MB IDE Hard Drive 16ms
- 1.2 and 1.44 Floppy Drives
- 14" SVGA (1024x/68) Color Monitor
- Super VGA Card w/512K RAM
- Mini-tower Case w/200w PS

\$999

Add \$15 for 40MHz

Software/Printers Special (w/a system only)

Software	Printers
MS Works \$110	HP Deskjet 500 \$375
MS Word 2.0 \$279	HP Deskjet 500C \$495
MS Excel 4.0 \$279	HP Deskjet 550C \$685
MS Office 3.0 \$459	HP LaserJet IIIP+ \$769
Word Perfect 5.1 \$255	HP LaserJet 4 \$1399
Lotus 1-2-3 \$350	Panasonic 1180i \$155
	Panasonic 1123 \$195

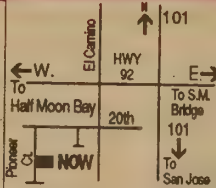
SYSTEMS INCLUDE: 101 Enhanced Keyboard • 2HD/2FD IDE Controller • 2S, 1P, 1G Ports • Clock/Calendar

Monitors:	Orchid Pro IIS EISA w/1MB	\$235	525MB	\$965	Northgate Omni	\$69
14" SVGA .39dp Monitor	Orchid Fahrenheit	\$225	Controllers:		Northgate Ultra T	\$99
14" SVGA .28dp Monitor	Orchid Fahrenheit D 32bit	\$255	IDE 2H/2F 1:1 w/1P, 2S, 1G	\$22	Keytronics	\$39
14" SVGA .28dp N-I Monitor	Diamond Speedster Hi-C	\$139	IDE 4F/2H	\$39	Miscellaneous	
15" SVGA .28dp N-I Monitor (flat)	Diamond Stealth S3 VRAM	\$209	IDE 2H/2F w/1MB Caching	\$245	MS DOS 5.0	\$42
ViewSonic 6E 14" N-I 72MHz	Genoa 7900 w/1MB 16M Color	\$169	Adaptec 1522BK	\$159	MS Windows 3.1	\$45
SONY 1304s .25dp N-I (flat)	Hard Drives:		Adaptec 1542BK	\$255	3-Button Mouse	\$19
SONY 1604s 17" N-I .25dp (flat)	40MB	\$175	Adaptec 1742BK	\$495	2400 Baud Modem	\$39
Video Cards:	80MB	\$220	Keyboards:		9600 Baud Modem v32/v42	\$249
VGA w/256K RAM	100MB	\$245	101 Enhanced	\$20	96/24 Fax/Modem	\$69
SVGA w/512K RAM	130MB	\$285	101 Enhanced Click	\$35	9600/9600/Fax/Modem (Zoom)	\$255
SVGA w/1MB RAM	213MB	\$425	Focus 2001	\$40	120MB Colorado Tape Bk-up	\$185
Orchid Pro IIS w/1MB	340MB	\$699	Focus 8000 w/Calculator	\$55	250MB Colorado Tape Bk-up	\$249

101 Computers

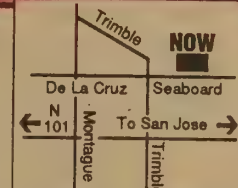
San Mateo
Tel: 415/345-4577
Fax: 415/345-4576

Hours:
M-F 9-6:00
Sat. 11-6



NEW LOCATION

2031 Pioneer Court
Suite #2,
San Mateo, CA 94403



San Jose
Tel: 408/894-7060

Hours:
M-Th 9-8
Fri 9-6
Sat. 11-6
Fax: 408/894-7062
2526 Seaboard Ave.
San Jose, CA 95131

* A hard copy quote will be required. The quote must be for an equal value items. Cash prices. Prices are subject to change without notice. Not responsible for typographical errors.

Tools For Doing Your Taxes

Using Spreadsheet And Database Software To Complete Your Taxes—Faster And More Accurately

BY ROBERT MOSKOWITZ

I'm a computerized taxpayer. No, I don't submit my forms to the IRS electronically. I don't even rely on any of those special purpose tax-preparation software packages. Instead, I make direct use of the speed, memory, and power of my PC's spreadsheet and database software to improve the accuracy of my tax calculations, take full advantage of the tax laws, and cut down the time involved in filing.

Over the years, I have found that my general purpose database and spreadsheet programs have all the power needed to do the record-keeping and repetitive calculating I need to file my taxes. They also give me the flexibility to play with various scenarios to see how I can structure and reassign my various business-related expenditures to minimize my tax obligations. And you can do the same. Just follow along with me, step by step:

Sometime during the year I keypunch all my transactions. This involves about eight hundred or a thousand checks going out and others coming in, plus another three or four hundred incidental cash transactions. Ideally, I keypunch the data every day, or several times a week. But when things pile up, I enter the details into the computer at the end of every month. I used to ignore this routine, but then I'd have to spend about three days every year at tax time putting my computerized "books" in order.

I don't mind all this keypunching because having the data in my PC saves me so much time in filing that I'm way ahead on April 15th.

(One advantage I have is that I also keep track of most of my expenses through my database program, so all these transactions are already captured in a "currently due" file in my PC. When I pay a bill, I mark that record "paid" and transfer it to another file. At tax time, I can quickly massage this data file to get the totals for all the tax deductible categories of expenses. In addition, every year I print a series of itemized, sorted, and totaled reports on all my expenditures. This enables me to review our household income for the

year, and to show my wife exactly how much we spent on various categories.)

Aside from the keypunching chore—which might be diminished if I could get my checks entered into my PC through a magnetic ink reader, directly from the bank's computers, or by paying someone else to do the keypunching—the rest of the taxpaying ritual is a breeze.

Armed with my tabulated reports, I type the critical numbers into a copy of last year's tax-calculation spreadsheet. There are always new wrinkles and adjustments to the tax laws, but last year's spreadsheet is a good place to start, and the spreadsheet software makes it easy to conform to all the new tax law changes. If self employment tax rises to 15.3% (as it did for tax year 1991, for example), it's a simple matter to modify the relevant formula in the spreadsheet. I make sure to save the updated spreadsheet with a new file name to preserve my record of last year's filing.

When the calculations are complete, I simply print the spreadsheet and copy the final numbers to their proper places in the IRS forms by hand.

I simply create a "virtual" set of forms in the spreadsheet, labeled with all the same line items and line numbers as the real forms. The forms don't look quite the same, but they are functionally identical to the real ones and make it easy to copy the numbers into their proper places.

Sure, I have software with the capability to print data right onto the IRS's forms. But to use it, I would first have to line things up, and do annual updates, too. I find it faster to do the copying by hand, and this gives me one last check on the validity of my numbers, too.

THE DETAILS

As you probably know, calculating your federal and state taxes is pure detail work. The only general principle is that general principles don't apply. So let's get down to the quick and dirty business of doing taxes with our favorite PC database and spreadsheet

applications.

Using my favorite database program, I enter the information for each transaction during the year: payee, amount, date, check number (if applicable), and a two-digit accounting code that tells me where to fit this figure into my tax calculations. I have different codes for interest, dividend, and business income, as well as for expenses like insurance on my home, health, car, and business—because

With my favorite electronic spreadsheet loaded, I try to enter each dollar amount only once. This eliminates large opportunities for introducing human error.

this is how the IRS likes it. I have even more accounting codes for repairs, supplies, utilities, mortgage interest and principle, and still other codes for personal and business debt, automobile expenses and registration fees, medicines, medical care, entertainment, electronic data access, and so on.

At tax time, I print out all these transactions for a permanent record, but I also print a summary sheet that gives me a total for every accounting code. This—along with the name

5 Year in-store Labor warranty!

1 Year warranty on parts!

486DX-50EISA Complete System

**With Hard Disk Drive
& Super VGA Monitor**

- ☐ Intel 80486DX-50MHz CPU chip, **AMI** BIOS
- ☐ 256K fast SRAM Cache on board (20NS)
- ☐ 4MB RAM (60NS), Maximum 128MB
- ☐ One 32bit local bus, Three 32bit EISA, Four ISA slot
- ☐ 275 Watt power supply with two cooling fan
- ☐ Full tower case with 7 drives bay
- ☐ Teac One 5 1/4" 1.2MB floppy drive
- ☐ Teac One 3 1/2" 1.44MB floppy drive
- ☐ Two serial, One parallel & Game port
- ☐ Focus 2001 enhanced 101-key keyboard
- ☐ MicroSoft DOS 5.0 & Windows 3.1, Hi-res mouse
- ☐ Landmark 167.26MHz (V2.0)
- ☐ Power meter 22.399 mips (V1.5)
- ☐ Norton SI 77.7 (4.01)

SVGA & 130MB **\$1849**

SVGA & 245MB **\$1989**

SVGA & 340MB **\$2199**

486DX/2-66 Complete System

**With Hard Disk Drive
& Super VGA Monitor**

- ☐ Intel 80486DX/2-66MHz CPU, w/128K Cache
- ☐ 4MB RAM, **AMI** BIOS
- ☐ IDE Controller and Hard Drive
- ☐ Super VGA card with 1024K
- ☐ 14" Super VGA monitor 0.28
- ☐ Teac 1.2MB or 1.44MB floppy drive
- ☐ Two serial, one parallel, game port
- ☐ Focus 2001 enhanced keyboard
- ☐ MS DOS 5.0 w/ Menu
- ☐ 5 Year labor, One year parts warranty

SVGA & 130MB **\$1599**

SVGA & 245MB **\$1719**

SVGA & 340MB **\$1939**

486DX-50 Complete System

**With Hard Disk Drive
& Super VGA Monitor**

- ☐ Intel 80486DX-50MHz CPU, w/128K Cache
- ☐ 4MB RAM, **AMI** BIOS
- ☐ IDE Controller and Hard Drive
- ☐ Super VGA card with 1024K
- ☐ 14" Super VGA monitor 0.28
- ☐ Teac 1.2MB or 1.44MB floppy drive
- ☐ Two serial, one parallel, game port
- ☐ Focus 2001 enhanced keyboard
- ☐ MS DOS 5.0 w/ Menu
- ☐ 5 Year labor, One year parts warranty

SVGA & 130MB **\$1479**

SVGA & 245MB **\$1599**

SVGA & 340MB **\$1819**

Serving You Since 1985 !

486DX-33 Complete System

**With Hard Disk Drive
& Super VGA Monitor**

- ☐ Intel 80486DX-33MHz CPU, w/128K Cache
- ☐ 1MB RAM, **AMI** BIOS
- ☐ IDE Controller and Hard Drive
- ☐ Super VGA Card with 1024K RAM
- ☐ 14" Super VGA monitor 0.28
- ☐ Teac 1.2MB or 1.44MB floppy drive
- ☐ Two serial, one parallel, game port
- ☐ Focus 2001 enhanced keyboard
- ☐ MS DOS 5.0 w/ Menu
- ☐ 5 Year labor, One year parts warranty

SVGA & 80MB **\$1169**

SVGA & 130MB **\$1219**

SVGA & 245MB **\$1339**

New 3486DX-33 Complete System

**With Hard Disk Drive
& Super VGA Monitor**

- ☐ Intel 80386DX-33MHz CPU, w/128K Cache
- ☐ 3486 Mother board Upgradable from 386DX to 486DX by changing CPU chip
- ☐ 1MB RAM, **AMI** BIOS
- ☐ IDE Controller and Hard Drive
- ☐ 14" Super VGA monitor 0.28
- ☐ Teac 1.2MB or 1.44MB floppy drive
- ☐ Two serial, one parallel, game port
- ☐ Focus 2001 enhanced keyboard
- ☐ MS DOS 5.0 w/ Menu
- ☐ 5 Year labor, One year parts warranty

SVGA & 80MB **\$ 919**

SVGA & 130MB **\$ 959**

SVGA & 210MB **\$1059**

386SX-25 Complete System

**With Hard Disk Drive
& Super VGA Monitor**

- ☐ Intel 80386SX-25MHz CPU
- ☐ 1MB RAM, **AMI** BIOS
- ☐ IDE Controller and Hard Drive
- ☐ Super VGA Card with 1024K RAM
- ☐ 14" Super VGA monitor 0.28
- ☐ Teac 1.2MB or 1.44MB floppy drive
- ☐ Two serial, one parallel, game port
- ☐ Focus 2001 enhanced keyboard
- ☐ MS DOS 5.0 w/ Menu
- ☐ 5 Year labor, One year parts warranty

SVGA & 80MB **\$ 829**

SVGA & 130MB **\$ 879**

SVGA & 210MB **\$ 949**



Mercury Computer Corporation

1601 Telegraph Avenue, Oakland, Ca 94612 Phone:(510)763-7631 Fax:(510)763-0814

Life-time Technical support!

30-day refund policy!

VIDEO CARD

Orchid	Local Bus, VESA1MB Hi-Color	1280x1024,	\$ 175
Fahrenheit	Hi-color, 1MB	1024x768	139
GENOA	SVGA local bus VESA, 1024 x 768, 1MB		169
tseng Lab	ET4000LV Local bus, VESA, 1MB		149
Diamond	1MB VRAM	1280x1024, Accelerator S3 chip	239
SpeedStar 24X	1MB, 1024x768, Non-interlaced		189
ATI	Ultra graphics w/Mouse		369
Trident	SuperVGA 1024x768 1MB RAM		59

MONITORS

ViewSonic	14"	1024x768 .28 Non-interlaced	SVGA ...	349
	17"	1280x1024 Non-interlaced		999
	20"	1280x1024 .31		1699

Eye-O Model Z1428

SuperVGA
\$255

14", .28 dot pitch
1024x768 resolution
Limited Stock

EC	FXG/ 4FG/ 5FG	649/749/1399
FG	21" 1280x1024 .28mm 135MHz bandwidth	2999
ony	14" 1024x768 .25 Non-interlaced Low radiation	559
04S	17" 1024x768 .25 30-57 KHz scan frequency	1045
ACKARD BELL	8528 SVGA 14" 1024x768 .28	279

DRIVES

Brand	model	capacity	speed	warranty	price
IDE Hard disk drive					
Conner	CP3000	42 MB	28 ms	1 year	159
Conner	CP30084	80 MB	19 ms	1 year	209
Conner	CP30104	120 MB	19 ms	1 year	239
Conner	CP3204	212 MB	19 ms	1 year	349
Conner	CP3544	540 MB	13 ms	1 year	899
Maxtor	7080	80 MB	19ms	1 year	209
Maxtor	7120A	125 MB	15 ms	1 year	239
Maxtor	7213A	213 MB	15 ms	1 year	349
Maxtor	LXT-340A	340 MB	15 ms	1 year	649
Maxtor	7245A	245 MB	15ms	1 year	255
Fujitsu	M2623T	420 MB	12 ms	5 year	899
Fujitsu	M2624T	520 MB	12 ms	5 year	949

SCSI hard drive

Maxtor	LXT-213SY	213 MB	14.5 ms	1 year	389
Maxtor	LXT-7080SR	80 MB	17 ms	1 year	239
Maxtor	LXT-340SYS	360 MB	15 ms	1 year	649
Maxtor	XT-8760S	650 MB	14 ms	1 year	1099
Maxtor	PO-12S	1.2 GB	13 ms	1 year	1399
Fujitsu	M2623S	425 MB	12 ms	5 year	Call
Fujitsu	M2623SA	687 MB	12 ms	5 year	1169
Fujitsu	1.2GB	1.2GB	14 ms	5 year	1699

Controller (IDE & SCSI)

ADAPTEC	1542BK SCSI hard/floppy controller	249
UltraStor	15C IDE 0k(8MB Max.)	189
UltraStor	24F SCSI (EISA) 64k buffer, fast SCSI-2	33MB/sec 399
UltraStor	14F SCSI (AT), 64k buffer, Fast SCSI-2	10MB/sec 229
Future Domain	TMC-1680 SCSI-2 (AT), drive 4 floppy	169
DTC	2290 IDE (EISA), drive 3 floppy, 7.1MB/sec	149
DTC	3290 SCSI (EISA), 33MB/sec	459

PRINTERS

Panasonic

KX-P1123	24 pin	214 cps	80 col	199
KX-P1124i	24 pin	240 cps	80 col	289
KX-P2123	24 pin	240 cps	80 col quiet	239
KX-P2124	24 pin	320cps	80 col quiet	349
KX-P2180	9 pin	192 cps	80 col quiet	159
KX-P1624	24 pin	240cps	132 col	349
KX-P2624	24 pin	300 cps	136col	379
KX-P4410	Laser	5 ppm	512K	629
KX-P4430	Laser	5 ppm	1MB PCL Scalable...	949
KX-P4455	Laser PS	11 ppm	2 MB 39 ps fonts ...	1695

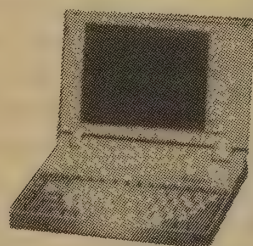
Hewlett Packard

DeskJet	500 / 550C	399/795
LaserJet	IIP plus / IIP	789/999
LaserJet	4 / IIID	1429/2295
LaserJet	IIISi	3495

EPSON

LQ-570	24 pin	315 cps	80col	269
LQ-870	24 pin	330 cps	136 co	459
LQ-1070	24 pin	315 cps	136col	389
Action	24 pin	200 cps	80col	209
LQ-2550	24 pin	400 cps	136col	899
FX-850	9 pin	264 cps	80col	309
FX-1050	9 pin	264 cps	132col	419
EPL-7000	Laser	6 PPM	512k	819
EPL-7500	Laser PS	6 PPM	2MB	1979
EPL-8000	Laser	10PPM	13 Scalable fonts	1349

New TOSHIBA Satellite T1800 Notebook



- 80386SX 20MHz
- 2MB RAM
- 60MB Hard drive

\$1499

☐ T-1850	4MB RAM, 80MB HD	\$1,879
☐ T-1850C	Color 4MB RAM, 80MB HD	\$2,349
☐ T-1850C	Color 4MB RAM, 120MB HD	\$2,639
☐ T-2200SX	2MB RAM, 80MB HD	\$1,889
☐ T-3300SL	4MB RAM, 120MB HD	\$2,149
☐ T-4400SX	486SX/25, Gas Plasma	\$2,399

We're at your side
brother

HL-10V Laser Printer

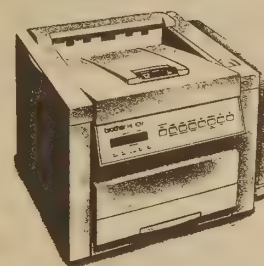
More Speed
More Features
Less Money

Lower paper tray

\$289

Memory board w/1mb

\$149



Save 35% Only

\$1199

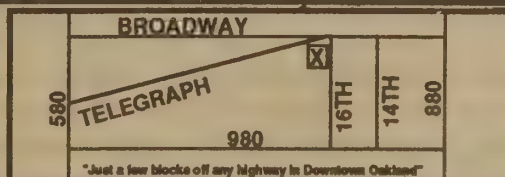
	Brother	HP LaserJet III
Page Per minute	10	8
Scalable fonts	12	8
Bitmapped fonts	24	14
Universal Tray	Yes	No
Gray Scales	64	8
Auto-Interface	Standard	No
Auto-Emulation	Standard	No

Year in-store Labor warranty! 1 Year warranty on parts! 48 Hour repair turn-around!
Life-time Technical support! 30-day refund policy! Corporate & Gov't POs welcome!

Store Hours:

M-F: 9AM to 6PM

Sat.: 10AM to 2PM



Sales Hotline:
510-763-7631

of every accounting code number—is the report I use most often in my tax calculations.

ENTERING DATA

With my favorite electronic spreadsheet loaded, I try to enter each dollar amount only once. This eliminates large opportunities for introducing human error. Any other locations that need these numbers all reference the original entry cells.

In a bid for neatness, I start with the cursor in cell A1 and use the whole first screen as a table of contents for the rest of the spreadsheet. This enables me to jump around in the file fairly quickly, a very important factor when you are checking your work. For example, last year's tax spreadsheet opens with this screen display, including summary figures referenced from other locations in the spreadsheet:

1992 TAXES—DIRECTORY

(Line references to Forms are given as "L.xx")

Item	Location
	Row-Column
Form 1040	A-21
Schedule C -	Robert A-118
	Francine A-88
Schedule W	C-62
Schedule A	A-149
Fed Tax Due	B-82
Calif. Form 540	A-207

Fran's Sched C total = \$0,000.00
 Rbt's Sched C total = \$0,000.00
 Deductible amount = \$0,000.00 from
 Sched A below
 Adj Gr Inc (L.32&33) = \$0,000.00

My next step is to begin with line 1, Form 1040, and simply work through it, following instructions. The first year I did this, I had to enter all the labels and line numbers. Now, I have only to edit the labels and line numbers from last year's file to reflect this year's changes. Whenever I'm asked for a dollar amount, I enter it into the spreadsheet rather than on the paper form. As I work down the page, I encounter a number of requests for specific information, such as income from dividends and interest. But I find these on my database summary report and enter them into the spreadsheet file.

SCHEDULE "C"

A little further along the IRS asks for income, wages, and profits or losses from a private business. These profits or losses are figured on a separate form called Schedule C. I don't give up. I don't become discouraged. The

first year, I simply moved the cursor to a clear part of the spreadsheet and began the same procedure: following instructions and entering all the labels, line numbers, and dollar amounts from my database report into the spreadsheet rather than the paper form. In subsequent years, I need only modify last year's file, and update the numbers with the new information from my database summary report.

These amounts include gross income, of course, reduced by expenditures such as repairs, advertising, legal and professional fees, insurance, rent, and all the rest that might be associated with operating a business. The

**One of the
biggest time-
savers of doing
taxes this way is
that the
spreadsheet
does all the
work when I go
back and
discover I've
made a mistake.**

spreadsheet's SUM feature makes it easy to obtain a net total—my "profit" for the year—by SUMming income and expenditures separately, then subtracting. The difference is the profit or loss for that Schedule C.

To eliminate errors, I don't enter the profit figure from Schedule C directly into the 1040 portion of the spreadsheet file. Instead, I have the spreadsheet software reference the Schedule C profit cell. I also reference this net figure anywhere else I need it, such as in calculating self employment taxes due.

If you have more than one Schedule C, as we do in this household, you simply repeat the process in another part of the spreadsheet. This is where the spreadsheet becomes particularly powerful. For example, my wife and I often allocate office expenses according to a simple proportion based on time spent working there. Rather than manually dividing and entering the numbers, I enter the full expense amounts in one series of

locations, and a standard proportion in another. Then each Schedule C includes its share of an expense by referencing the full amount and the standard proportion. As we adjust the proportional figure, each Schedule C recalculates itself automatically.

OTHER CALCULATIONS

With each Schedule C complete, I return to the 1040 portion of the electronic file and find more opportunities to perform rudimentary additions and subtractions in the spreadsheet. There are deductions from income, for example, for an Individual Retirement Account or other pension plan contributions. By setting up the formulas so the spreadsheet does these calculations, I need never do them again. Not now. Not next year! The only changes I have to make from one year to another are those needed to conform to modified tax laws.

SCHEDULE "A"

On the back side of the 1040, the work becomes a little more complicated. There are dollar deductions from my "adjusted gross income" for the number of dependents claimed, and for living expenses. Many people take the so-called "standard deduction" because they don't like doing the math. With the spreadsheet software fired up, calculating my "itemized deductions" is a breeze, and helps cut my taxes (a fact I can see plainly by comparing the results from itemized and non-itemized deductions).

The IRS wants "itemized deductions" figured on Schedule A. It's much simpler today than it used to be, but for years the spreadsheet has been making this work easy for me. Basically, I began by moving the cursor to a clear part of the spreadsheet and building a "virtual" Schedule A, as I did with other forms. This year, I had to make no changes at all from the portion of last year's file mimicking the Schedule A.

The calculations are a little more complicated here because the deductible portion of medicine, medical care, and health insurance premiums depends on the level of "adjusted gross income." The math would get complicated and tedious to do by hand. With the spreadsheet, though, I have been careful to use references to other cells instead of hard numbers. As a result, the computer does the calculations automatically.

In different sections of Schedule A, I deduct various state and local taxes, various portions of the interest I paid on mortgage and other borrowings, my political and charitable contributions, and even the money spent on tax preparation fees (zero for many



Authorized Dealer

Apple® Macintosh® Classic® II 4/40

- Built-in capabilities
- Sound capabilities

\$875

Apple® Macintosh® IIfx 4/80	..2475
Apple® Macintosh® IIfx 5/80 w/CD ROM	..2725
Apple® Macintosh® IIfx 5/80	..1945
Apple® Macintosh® IIfx 5/230	..2250

Apple® Macintosh® LCII 4/40

- (no monitor)
- Most affordable color
- Easy to use

\$865

Apple® Macintosh® Quadra™ 700 4 MB RAM	..3385
Apple® Macintosh® Quadra™ 950 8 MB RAM	..5175
PowerBook 160 4/80	..2450
PowerBook 160 4/120	..2765
Apple® Macintosh® IIfx	..1779

Apple® Macintosh® IIfx 5/80

- (no monitor, no kybd)
- Color & sound capabilities
- Expandable

\$996

Apple® Stylewriter® Personal LaserWriter® NTR	..1575
LaserWriter® IIf	..2045
LaserWriter® IIfx	..2599
LaserWriter® Pro	..2215

Apple® Macintosh® PowerBook™ 145

- 25MHz speed
- 40/80MB HD Drive, 4MB RAM
- Runs virtually all Macintosh® software
- Bundled remote communications capability (AppleTalk® Remote Access)
- Built-in networking
- Sound capabilities

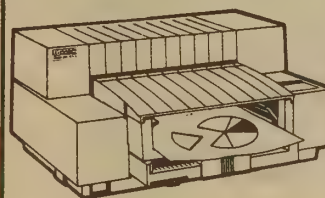
CALL

HP PRINTERS

HP DeskJet Portable	..375
HP DeskJet 500C	..475
HP DeskJet 550 C	..675
HP DeskWriter 550 C	..675
HP DeskWriter C*	..425
HP DeskWriter*	..325
HP DeskJet 500	..375
HP LaserJet IIP Plus	..770
HP LaserJet IIP	..922

*After Rebate

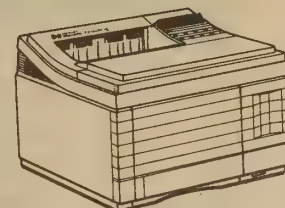
HP LaserJet IIP Postscript w/AppleTalk®	..CALL
HP LaserJet IIP	..2199
HP LaserJet IIfx	..3095
HP LaserJet IIfx Postscript w/AppleTalk®	..CALL
HP ScanJet IIf	..CALL
HP ScanJet IIfx	..CALL
HP Fax 310	..CALL
HP Fax 200	..CALL



DeskWriter 550C Printer

- Affordable 300dpi black and color printing on plain paper, transparencies, glossy paper, and envelopes
- Easy integration with Mac and all Mac applications
- 35 scalable fonts
- 3 Year limited warranty

\$675



HP LaserJet 4

AppleTalk® compatibility with optional interface. Dependable HP performance.

CALL

Compaq Contura 3/25



- 386SL
- 4MB RAM
- 60MB Hard Disk
- DOS
- Windows
- Winworks
- TrackBall

\$1555

Every Prolinea bundled with DOS, Windows, Mouse!

Prolinea 3/25S M84, Bundle	..912
Prolinea 3/25S M120, Bundle	..975
Prolinea 4/33 M120, Bundle	..1575
Prolinea 4/33 M240, Bundle	..1765
Prolinea 4/50 M120, Bundle	..1895
Pagemarq 15 PPM	..3099
LTE 386/20 84MB	..1349

Every Contura bundled with DOS, Windows, Trackball, PFS: Windows Works!

Contura 3/20, M84, Bundle	..1295
Contura 3/25, M84, Bundle	..1555
Contura 3/25, M120, Bundle	..1745
Contura 3/25C, M84, Bundle	..2075
Contura 3/25C, M120, Bundle	..2265
Deskpro 4/251S M84, Bundle	..1670
Deskpro 4/251S M120, Bundle	..1775

NEC

SPECIALS

NEC 20" XL color (demo)	..549
Tape Backup 2.2GB	..899

NEC Laser Model 95 AppleTalk, Postscript Level II	..1399
3FXG-15" Color	..635
4FG-15" Color	..755
5FG-17" Color	..1269
6FG-21" Color	..2295

TOSHIBA

T1850 80MB, DOS, Windows, Mouse	..1649
T1850C 80MB	..2265
T3300SL 120MB	..2066
T4500C 80MB	..2169
T4500C 120MB	..3675

OKIDATA®

Okidata ML 320	..295
Okidata ML 321	..414
Okidata ML 380	..215
Okidata 393 Plus	..879
Okidata 393C Plus	..939
OL 400 LED	..585
Okidata ML 590	..419
Okidata ML 591	..569
OL 810 LED	..999
OL 830 LED	..1232

EPSON

Epson LQ-570	..230
Epson LQ-870	..439
Epson LQ-860	..557
Epson LX-1070	..355
Epson LQ-1070	..377
Epson LQ-1170	..605
Epson FX-870	..266
Epson FX-1170	..390
ActionLaser II	..685
Epson EPL 800	..1078

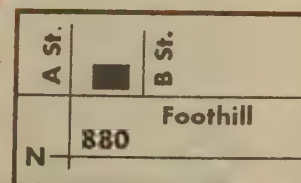
ComputerLand of Hayward

BUSINESS TO BUSINESS • PERSON TO PERSON

22540 FOOTHILL BLVD. HAYWARD, CA 94541

Tel: 510/538-8080 Fax: 510/538-8082

Hours: Mon-Fri. 8:30-6:00 Sat 11:00-5:00



Prices reflect a cash discount. Prices subject to change without notice.

At ComputerLand of Hayward we are dedicated to serving you, our customers. You can depend on us for quality service, same day and 24-hour service, on some of the products we offer.

THE POWER DESK

NEW DESK from **WINNERS ONLY** INC.

The Next Generation desk from the premier desk manufacturer - Winners Only. A compact and versatile work station for home or office. Stop in and see it today!

DESK PHOTO



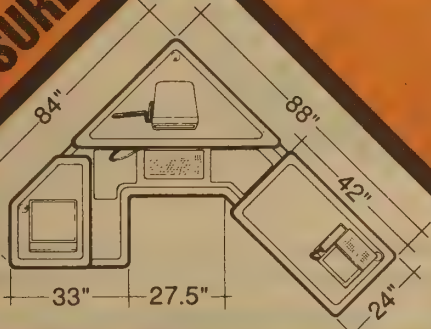
POWER UP

**5 TELEPHONE JACKS
10 POWER OUTLETS
(built into the desk!)**

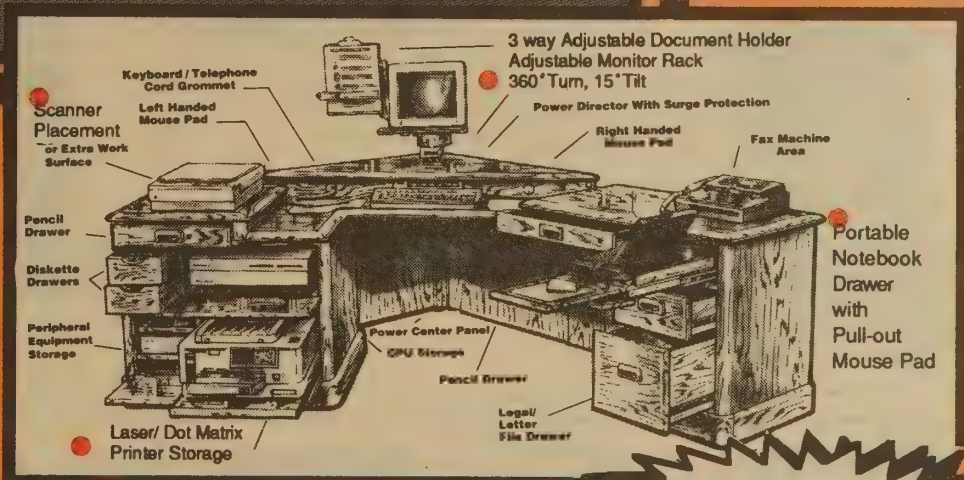
Power up with the new Power Desk. It simplifies computer furniture and gives you an efficient and great looking work station. At participating dealers today-hurry in!

NEW!

MEASUREMENTS



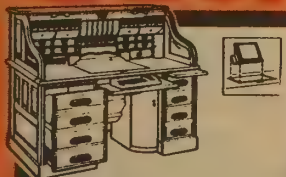
FEATURES



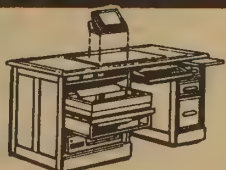
The Power Desk measures up in quality and design. Try it out today at your nearest Winners Only dealer. We're sure you'll think it's great too!

CHECK OUT OUR WHOLE LINE OF OAK COMPUTER DESKS.

WOW



762 CR 62" w x 33" d x 51" h
executive rolltop - recessed monitor



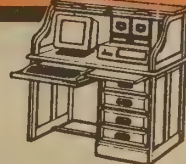
760 CD 60" w x 30" d x 30" h
recessed monitor



949 CS 51" w x 24" d x 29" h
computer workstation



960C 60" w x 36" d x 52" h
deluxe - solid oak raised panels all around



948 C 48" w x 29" d x 49" h
locking tambour - 14" monitor viewing



954C 54" w x 29" d x 49" h
locking tambour - printer drawer



"HOOT" JUDKINS, INC.

FINISHED WOOD FURNITURE

REDWOOD CITY

1269 Veterans Blvd. • 367-8181

SAN FRANCISCO

1142 Sutter St. • 673-5454



**NOBODY BEATS US ON
PRICE, SELECTION OR
SERVICE... NOBODY!**
267-0700

SAN JOSE • 5041 Almaden Expy.

DISCOUNT OAK

730-1658

ABSOLUTELY THE BEST PRICES IN THE BAY AREA
SUNNYVALE • 201 W. El Camino Real

**FOWLER'S
ALL WOOD FURNITURE**

Quality For Less Since 1967
FINISHED • UNFINISHED

WALNUT CREEK

2940 North Main St. • 939-5558

ANTIOCH/PITTSBURG

2685 East Leland • 439-WOOD

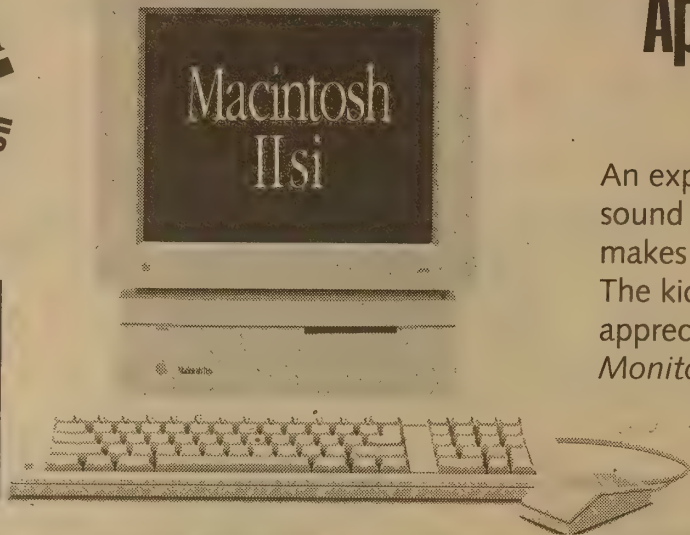
DEALERS

DESK

We'll Match Any Price From Any Authorized Apple® Reseller On Any Apple® Product!*



**WHILE
SUPPLIES
LAST!**



Apple® Macintosh® IIx

Expandable!

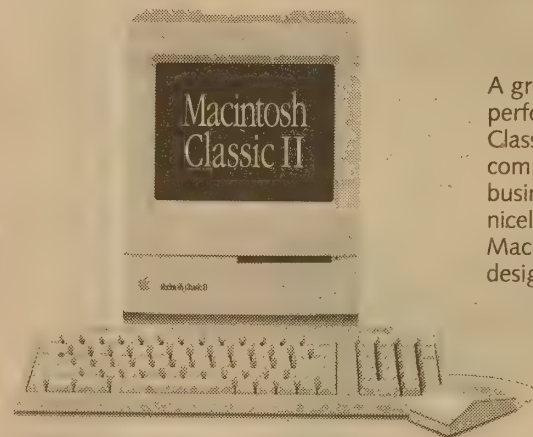
An expandable combination of color and sound capabilities, with a small footprint that makes it a great fit in any home or business. The kids will love this one for games; you'll appreciate its speed and expandability. *Monitor and keyboard extra.*

**3 MB/40 HD
\$969**

**Even
Lower**

WAREHOUSE PRICING!

Apple® Macintosh® Classic® II 4/40



A great combination of solid performance and affordability, the Classic II is the perfect starter computer for students and small businesses. It runs System 7™ nicely and sports the famous easy Macintosh interface and all-in-one design.

\$849.

Apple® Macintosh® LCII



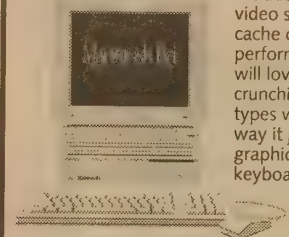
Affordable Color!

For presentations, education, kids, the sciences, and the arts, you need color! And there's no easier color computer to use than the affordable LC II, with its slender modular design and ability to run all your favorite software. *Keyboard & Monitor Extra.*

4 MB/40 HD \$849 4 MB/80 HD \$999 4 MB/160 HD \$1149

37 Month Business Lease

Apple® Macintosh® IIfx



Includes built-in flexible video support and a cache card for increased performance. Businesses will love its number-crunching speed; creative types will appreciate the way it juggles color graphics. *Monitor and keyboard extra.*

5 MB/0 \$1849

60 Month Business Lease

5 MB/80 HD \$1999

72 Month Business Lease

While Supplies Last!

Apple® Macintosh® IIfx



Future Expandability!

4 MB/80 HD \$2499

80 Month Business Lease

Keyboard & Monitor Extra

Apple® Macintosh® Quadra™



The highest performance desktop Macintosh, the Macintosh Quadra features powerful built-in video support. It's an excellent choice for businesses and technical professionals. *Monitor and keyboard extra.*

4 MB \$3499

112 Month Business Lease

Maximum Flexibility!

*LIMITED QUANTITIES ON SOME PRODUCTS - SEE STORES FOR AVAILABILITY LEASING AVAILABLE THROUGH AT&T. PRICES BASED ON 48 MONTH LEASE WITH 10% BUYOUT OPTIONAL
*Reseller must have product in stock in order to qualify for price matching.



Authorized Reseller

©1992 Apple Computer, Inc. Apple, the Apple logo, Macintosh, LaserWriter, StyleWriter, AppleTalk, and Mac are registered trademarks of Apple Computer, Inc. Macintosh Quadra, System 7, TrueType, Macintosh Duo and PowerBook are trademarks of Apple Computer, Inc. Classic is a registered trademark licensed to Apple Computer, Inc. PostScript is a trademark of Adobe Systems, Inc.

WHOLE EARTH

ELECTRONICS

SAN MATEO
Island Shopping Center
578-9200
M-F 10-9 Sat 10-6 Sun 11-6

SAN JOSE
3530 Stevens Creek Blvd
554-1500
M-F 10-9 Sat-Sun 10-6

Errors subject to correction.
Prices subject to change without notice.

We'll Match Any Price From Any Authorized Apple® Reseller On Any Apple® Product!*

The New Incredibly Compact Notebook!

Apple® Macintosh® PowerBook Duo™ 210



**The Best
of Both
Worlds!**

**'63 Month
Business Lease***

4 MB/80

\$1979

Apple® Macintosh® PowerBook Duo™ 230

High Performance at home or away!



4 MB/80

\$2349

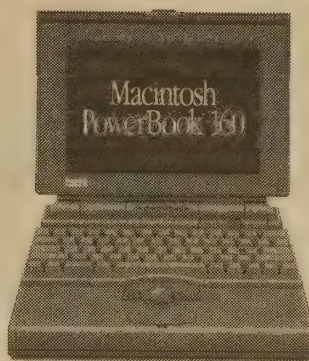
**'75 Month
Business Lease***

4 MB/120

\$2629

**'84 Month
Business Lease***

Apple® Macintosh® PowerBook™ 160



A16-level grayscale display for realistic graphics, and comes with on-board video-out capabilities with built-in support for a variety of monitors—a powerful advantage for traveling presentations or editing artwork on the road.

**'70 Month
Business Lease***

4 MB/40

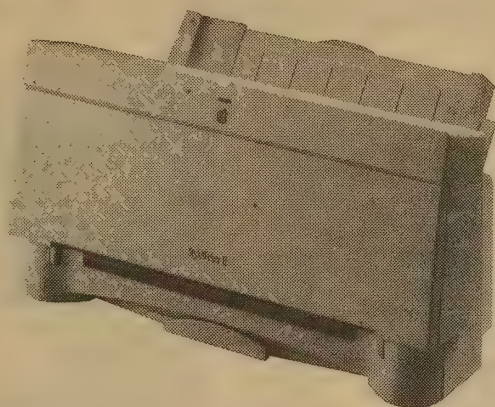
\$2179

WAREHOUSE PRICING!

Apple® StyleWriter® II

New

The new StyleWriter II printer gives laser quality printing at an affordable price.

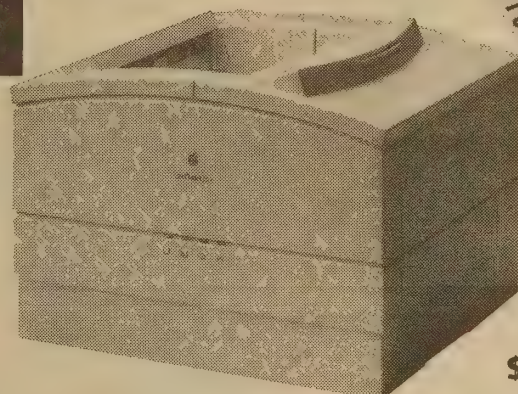


\$349

Apple® LaserWriter® Pro 600

New

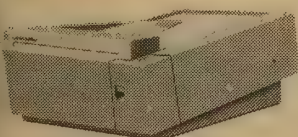
The new LaserWriter Pro 600 is the perfect choice for high performance printing.



**'59 Month
Business Lease***

\$1849

Apple® Personal LaserWriter® NTR

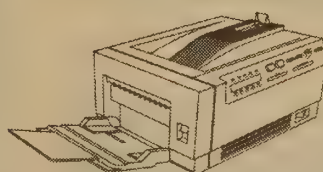


Connect simultaneously to Apple Macintosh® and MS-DOS computers! The NTR will pump your text out fast and make your art look gorgeous with a modern RISC controller and advanced page description language.

\$1499

**'49 Month
Business Lease***

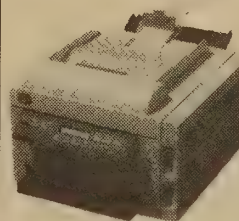
QMS-PS 410 Printer



QMS-PS 410

4 page-per-minute PostScript® printer with all the most requested features at an affordable price. True Adobe PostScript, 45 resident fonts & ATM technology built-in, works with IBM and Apple® Macintosh® computers, 16 MHz 68020 processor.

IBM® Laser Printer 6A & 10A



6A: 1799 10A: 2295

Nobody beats IBM for affordable high-resolution output from your Apple Macintosh®. Check these features: bi-directional AppleTalk, true Adobe PostScript, small footprint, superior paper handling, contrast and darkness controls, built-in text smoothing. Plus, the 10-page-per-minute 10A comes standard with 600 DPI resolution! (The 6-page-per-minute 6A easily upgrades to 600 DPI.)

*Reseller must have product in stock in order to qualify for price matching.

© IBM is a registered trademark of International Business Machines Corp. in the U.S. and other countries and is used under license.™ Lexmark is a trademark of Lexmark international, Inc.



WHOLE EARTH
ELECTRONICS

SAN MATEO
Island Shopping Center
578-9200
M-F 10-9 Sat 10-6 Sun 11-6

SAN JOSE
3530 Stevens Creek Blvd
554-1500
M-F 10-9 Sat-Sun 10-6

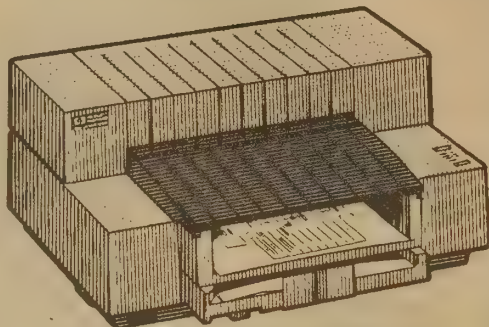
Errors subject to correction.
Prices subject to change without notice.

We'll Match Any HP Price From Any Reseller On Any HP Product!*

HP Deskwriter Printer

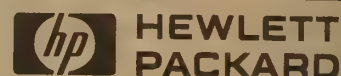


Don't settle for less than perfect, professional-looking documents. The Deskwriter prints at a smooth 300 dpi, it's affordable, and it's compatible with AppleTalk® for use with your Apple® Macintosh® personal computer.

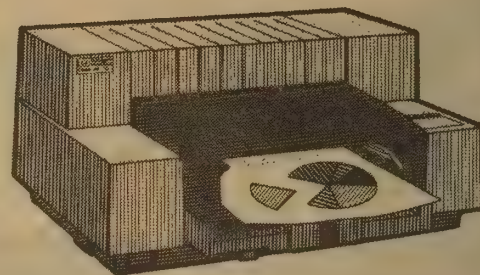


Limited Supply

HP DeskWriter C Printer



The HP DeskWriter C adds color capacity to an already famous laser quality black output. It's compatible with Apple® Macintosh® personal computers—and your budget.



\$549.

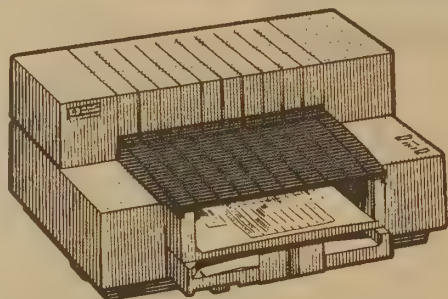
WAREHOUSE PRICING!

*Reseller must have product in stock in order to qualify for price matching.

HP DeskJet 500 Printer



Get laser-sharp printing from all your DOS and Windows applications at a dot-matrix price. This instant classic inkjet printer from HP works with TrueType or font-scaling software to give you perfect type at any size.

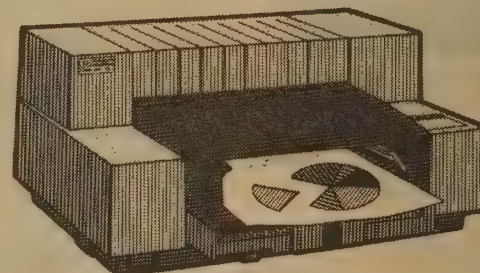


\$375.

HP DeskJet 500C Printer

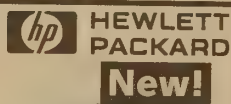


Get 300 dpi laser-quality color printing on plain paper and transparencies, for persuasive design and presentation power at a fraction of the cost of a color laser printer. Supports all major software including Windows; 3-year limited warranty.



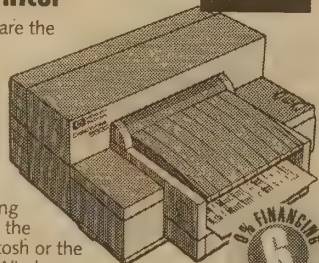
\$549.

DeskWriter 550C Printer & DeskJet 550C Printer

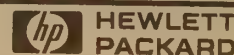


New!

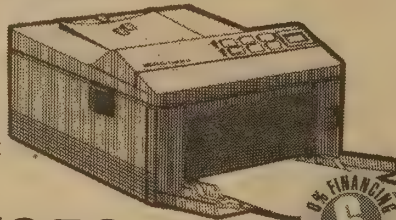
These capable new printers are the perfect answer for small businesses that do occasional presentations and graphics. They'll give you full color output for beautiful pictures or true black output for crisp text, all at a laser-quality 300 dpi—and all without switching ink cartridges. Choose from the DeskWriter 550C for Macintosh or the DeskJet 550C for DOS and Windows.



HP LaserJet IIP Printer



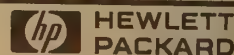
This LaserJet is a perfect match for small businesses. It's compact but powerful, with great paper-handling features and faster print speed than other printers in its price range. The IIP also features built-in type scaling and upgradeability to PostScript® for PC and Macintosh.



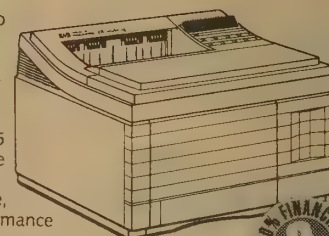
\$959.



HP LaserJet 4 Printer



HP takes laser printing to the fourth dimension with this surprisingly affordable 600 dots-per-inch printer. (That's twice the resolution of the LaserJet III.) With 45 fonts, 8 page-per-minute speed, fast output from Windows, and, of course, the great network performance you'd expect from HP.



© IBM is a registered trademark of International Business Machines Corp. in the U.S. and other countries and is used under license.™ Lexmark is a trademark of Lexmark international, Inc.

Qualify for Whole Earth Access Financing and pay no interest on any computer purchase over \$500. Minimum monthly payments required, and if not paid in full in 6 months, finance charges will accrue from date of purchase. Offer does not apply to consumer electronics products.

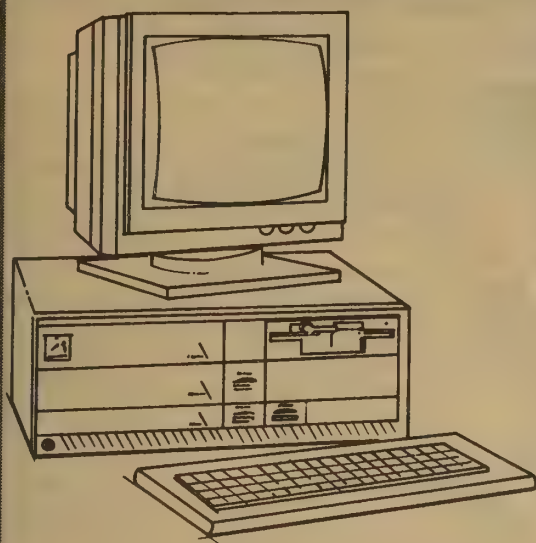


SAN MATEO
Island Shopping Center
578-9200
M-F 10-9 Sat 10-6 Sun 11-6

SAN JOSE
3530 Stevens Creek Blvd
554-1500
M-F 10-9 Sat-Sun 10-6

Errors subject to correction.
Prices subject to change without notice.

The Best Computers at the Best Prices!



\$369

386DX-40 MHz

- 1 MB RAM upgradable to 32 MB • 64k RAM cache upgradable to 256k
- 1.2 MB floppy drive
- IDE Interface, 2 FD, 2 HD, 1 parallel, 2 serial, 1 game I/O
- 101 keyboard
- Desktop system
- #UTRNCA0002
- Monitor Extra

\$649

486DX-33 MHz

- 1 MB RAM upgradable to 32 MB • 64k RAM cache upgradable to 256k
- 1.2 MB floppy drive
- IDE Interface, 2 FD, 2 HD, 1 parallel, 2 serial, 1 game I/O
- 101 keyboard
- Desktop system
- #UTRNCA0004
- Monitor Extra



\$799

486DX2-50 MHz

- 1 MB RAM upgradable to 32 MB • 64k RAM cache upgradable to 256k
- 1.2 MB floppy drive
- IDE Interface, 2 FD, 2 HD, 1 parallel, 2 serial, 1 game I/O
- 101 keyboard
- Desktop system
- #UTRNCA0006
- Monitor Extra

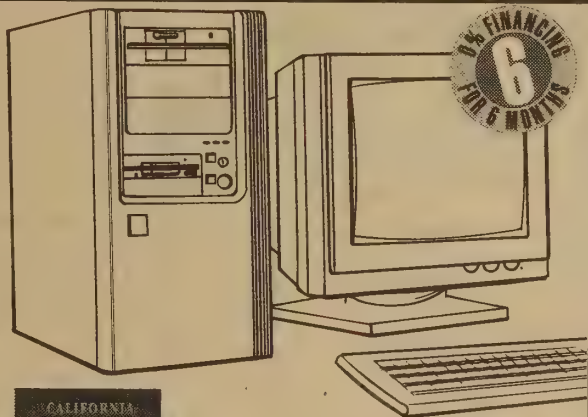


WAREHOUSE PRICING!

486DX-50 Mid Tower

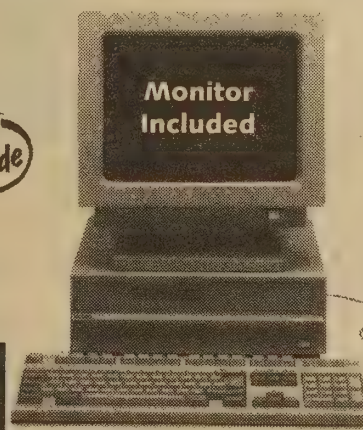
- 4 MB RAM
- 64k RAM cache
- SVGA w/512k video memory
- 3-1/2" & 5-1/4" floppy drives
- 200 watt power supply
- 101 keyboard
- DOS 5.0
- Windows 3.1
- McAfee Antivirus
- 1-year depot warranty

#CCWSCA0002
Monitor Extra



\$1899.
w/170MB HD

IBM®PS/1®Consultant



- 486SX 25MHz
- 129 MB HD
- 4 MB RAM (expandable to 32)
- 8k internal cache
- VGA Color monitor
- DOS 5.0 • Windows 3.1
- Mouse • Modem
- Microsoft Works for Windows
- Printshop Deluxe
- Quicken
- Virus Protection
- 3 months free Prodigy®
- Easy built-in help system and tutorial
- PS/1 Club for 20-hour help via modem

Model 2133653

\$1599



© IBM is a registered trademark of International Business Machines Corp. and is used under license. ©PS/1 is a registered trademark of International Business Machines Corp., Inc. The Intel Inside logo is a trademark of the Intel Corporation.

TOSHIBA

Toshiba Satellite T1800

- So light, it practically defies gravity (6.8 lbs)
- Stellar i386SX-20 MHz processor
- 64-gray VGA display for out-of-this-world graphics
- Galactic-sized 60 MB hard drive
- Universal 3-1/2" floppy drive
- 2 MB RAM (expandable to 10)



\$1399.

TOSHIBA

Toshiba Satellite T1850

- 6.8 lbs light
- Brilliant i386SX-25 MHz processor
- 64-gray VGA display
- 80 MB hard drive
- Universal 3-1/2" floppy drive
- 4 MB RAM (expandable to 12)
- gives Windows a rocket boost



\$1699.

altima

Altima 486 Notebook

- 486 SX • 25 Mhz •
- 4 MB RAM • 8k cac MB HD
- 10" diagonal CCFT LCD
- 64 level gray scaling
- Simultaneous displ. LCD & external monit
- 2.5-3 hr. battery life
- DOS 5.0 • Windows 3.1 - Case
- #ACTICA0063



\$2449

Qualify for Whole Earth Access Financing and pay no interest on any computer purchase over \$500. Minimum monthly payments required, and if not paid in full in 6 months, finance charges will accrue from date of purchase. Offer does not apply to consumer electronics products.

WHOLE EARTH

ELECTRONICS

SAN MATEO
Island Shopping Center
578-9200
M-F 10-9 Sat 10-6 Sun 11-6

SAN JOSE
3530 Stevens Creek Blvd
554-1500
M-F 10-9 Sat-Sun 10-6

Errors subject to correction.
Prices subject to change without notice.

Software for Education, Productivity & Just Plain Fun!

Software for DOS

Berkeley Star Trek: The Screen Saver

Prevent monitor burn-in with Star Trek: The Screen Saver! Over 15 colorful, sound-packed displays based on Star Trek, including Kirk, Spock, Tribbles and more!

\$35⁹⁵



Reader Rabbit 2

Take children on a fantasy railroad trip through Wordville as they learn to read and spell on their own.

\$34⁹⁵



Prince of Persia from Broderbund

Animated game of the year, with Arabian Nights theme and endlessly challenging levels.

\$25



Microsoft Works

This compact, complete integrated package includes a word processor, spreadsheet, modem program, database, and drawing tools.

\$135⁹⁵



Microsoft Golf for Windows

A challenging golf simulation from America's #1 software maker.

\$38⁹⁹



Microsoft Word for Windows

With its customizable button bar, WYSIWYG display, and drag-and-drop editing, Word is an ideal graphical, intuitive word processor.

\$299



WordPerfect 5.2 for Windows

The best-selling word processor for the PC, packed with useful features. DOS and Windows versions available.

5.2 competitive \$109⁹⁹ upgrade



Broderbund KidPix

The world's wackiest painting program, with unique brushes, sounds, and rubber stamps. (Note to parents: Please try to pry yourself away and give the kids a chance!)

\$33⁹⁹



Microsoft Flight Simulator

Fly a Cessna 182, a Sopwith Camel, Schweitzer Sailplane, or a-gulp-Gates business jet! With realistic scenery, customizable weather and air traffic.

\$39⁹⁵



Bitstream Flinstones Fonts	16.99
Bitstream Star Trek Fonts.....	16.99
Bitstream Holiday Fonts	16.99
Quicken/Windows	29.95
Pagemaker/Windows	489.95
Great Naval Battles.....	45.95
The Oregon Trail	25.95
Betty Crocker's Cook Book	
DOS or Windows	19.95
Betty Crocker's Old Fashioned	
DOS or Windows	15.95
After Dark/Windows	25.95
PGA Tour Golf.....	39.95
Number Munchers.....	19.95
Print Shop Deluxe.....	47.95
WordPerfect Windows	241.95
Kid Pix Companion	23.95

WAREHOUSE PRICING!

Software for the Macintosh

Microsoft Works

Integrates the most-needed office applications into single easy to use package.

\$169⁹⁵



Berkeley Star Trek: The Screen Saver

Watch your screen come alive with realistic displays from the original Star Trek series.

\$34⁹⁵



Microsoft Flight Simulator

Fly a Cessna 182, a Sopwith Camel, Schweitzer Sailplane, or a-gulp-Gates business jet! With realistic scenery, customizable weather and air traffic.

\$41⁹⁵



Clarisc® FileMaker® Pro

The most powerful, easy to use software for invoicing, mail lists, business reports, and more. Version 2.0 adds 50 new features.

\$279⁹⁵



The Learning Co. Reader Rabbit 2

Take children on a fantasy railroad trip through Wordville as they learn to read and spell on their own.

\$34⁹⁵



Broderbund Print Shop

Generates greeting cards, business cards, letterhead, and signs - in color!

\$36⁹⁵



Broderbund KidPix

Children take instantly to this paint program that turns your Mac into magical art studio.

\$35⁹⁵



ClariscWorks™

Perfect for Macintosh owners! An award winning integrated software package.

\$99⁹⁵ with CPU purchase



SAM/Norton Bundle

Get two of the best-selling Mac utilities, one for virus prevention and one for disk/file maintenance

\$149⁹⁵



T/Maker Faxmania

An imaginative, customizable collection of 80 fax cover sheets for business or fun.

\$25⁹⁵



MECC The Oregon Trail

Develop strategic skills with this historically accurate journey through the frontier.

\$25⁹⁵



MECC Super Munchers

Learn fascinating facts in scores of subjects including animals, sports, geography, music and more.

\$35⁹⁵



Microsoft Word.....	\$289 ⁹⁵
Microsoft Excel.....	\$299 ⁹⁵
Microsoft Office.....	\$499 ⁹⁵
PageMaker	\$489 ⁹⁵
KidPix Companion	\$23 ⁹⁵
Kid Works 2	\$24 ⁹⁵
Grandma & Me CD	\$34 ⁹⁵
AutoDoubler V2.0	\$59 ⁹⁵
After Dark	\$25 ⁹⁵
More After Dark	\$21 ⁹⁵
Math Blaster	
Mystery	\$29 ⁹⁵
Prince of Persia	\$35 ⁹⁵
Tristan:	
Solid State Pinball	\$34 ⁹⁵
Intermission	\$29 ⁹⁵
Play Room	\$30 ⁹⁵
Quicken	\$41 ⁹⁵
SuperSolvers	
Spellbound	\$34 ⁹⁵
Outnumbered.....	\$34 ⁹⁵
Midnight Rescue	\$34 ⁹⁵
WordPerfect	\$289 ⁹⁵
Kings Quest V.....	\$39 ⁹⁵
Talking Classic Tales	\$58 ⁹⁵
Spelunx: Caves of	
Dr. Seudo	\$29 ⁹⁵
Number Munchers.....	\$15 ⁹⁵
Author's Teacher Trouble CD ROM.....	\$39 ⁹⁵
Cyberblast.....	\$39 ⁹⁵
Where in the World is	
Carmen San Diego	\$29 ⁹⁵
Where in Europe is Carmen San Diego...	\$29 ⁹⁵
Where in the USA is Carmen San Diego...	\$29 ⁹⁵
Capitalist Pig.....	\$34 ⁹⁵
Millie's Math House.....	\$24 ⁹⁵
Electronic Arts PGA Tour Golf	\$38 ⁹⁵
Electronic Arts PGA Tournament Course	\$21 ⁹⁵

Qualify for Whole Earth Access Financing and pay no interest on any computer purchase over \$500. Minimum monthly payments required, and if not paid in full in 6 months, finance charges will accrue from date of purchase. Offer does not apply to consumer electronics products.

WHOLE EARTH

ELECTRONICS

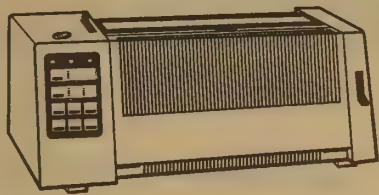
SAN MATEO
Island Shopping Center
578-9200
M-F 10-9 Sat 10-6 Sun 11-6

SAN JOSE
3530 Stevens Creek Blvd
554-1500
M-F 10-9 Sat-Sun 10-6

Errors subject to correction.
Prices subject to change without notice.

We'll Match Any Price From Any Reseller On Any Product!*

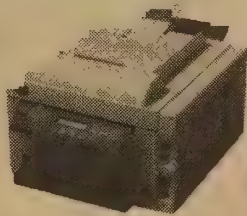
IBM® PPSII 2380



IBM takes impact printing seriously as you and your business. This solid, reliable 9-pin printer is built with a straight paper path so six-part forms and thick paper print right the first time.

\$319

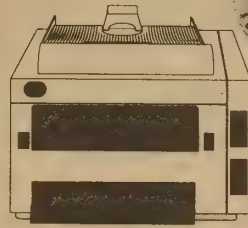
IBM® Laser Printers 6 & 10



IBM's Laser 6 and 10 come standard with a 200-sheet tray, and IBM's Print Quality Enhancement; optional envelope and extra paper drawers and an option for PostScript.®

6: **\$1299** 10: **\$1599**

IBM Laser Printer E

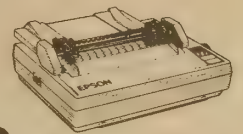


IBM's most affordable laser printer is built to fit on any desktop, prints 5 ppm, 300 dpi, and is built to meet demanding IBM standards. Limited Supply

829.

LX-810 EPSON®

9 Pin • SmartPark™ paper handling • 200 CPS Super draft • 30 CPS NLQ • High resolution graphics



169.

LQ-570 EPSON®

This 24 pin printer utilizes scalable fonts, enhanced graphics, and advanced paper handling to offer better performance.



269.

® IBM is a registered trademark of International Business Machines Corp. in the U.S. and other countries and is used under license. ™ Lexmark is a trademark of Lexmark international, Inc.

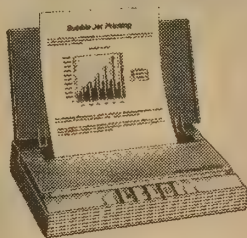
WAREHOUSE PRICING!

Canon BJ-10ex

Canon

The Canon BJ10ex gives you high-quality document, anywhere, anytime. This portable printer has 360 dpi resolution and battery operation. Optional battery and sheet feed.

\$289.

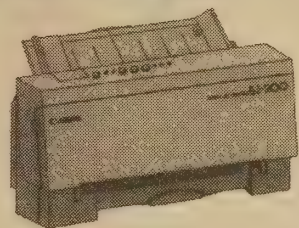


Canon BJ-200

Canon

Canon's new Bubble Jet printer incorporates new print technology that produces laser-quality printing at a truly affordable price.

\$399.

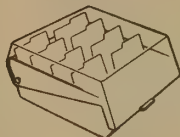


System Connection



Surge Protector
\$4⁹⁵

INLAND



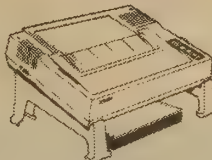
3.5" BOX
HOLDS 80 DISKS!
\$4⁹⁵

ALLSOP
Dual Disk Drive
Cleaner CK-50



\$5⁹⁵

CURTIS

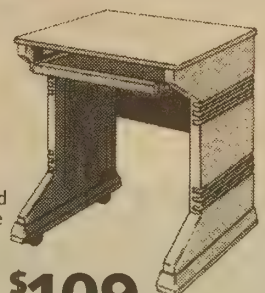


Universal Printer Legs
\$7⁹⁵

MicroComputer
Accessories, Inc.
A RUBBERMAID COMPANY

Space-Efficient
Workstation

A mobile, compact and self-contained computer desk for the home or office
• Glide-out keyboard drawer with built-in wrist rest/storage compartment #1050



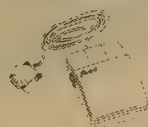
\$109.

BASIC NEEDS



Utility Pack
\$7⁹⁵

System Connection



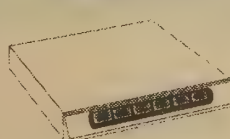
similar to
illustration
Mouse w/software
AC-ME01
\$9⁹⁵

MicroComputer
Accessories, Inc.
A RUBBERMAID COMPANY



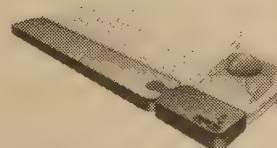
Tilt & turn
monitor stand
\$13⁹⁵

System Connection



Power Control
Center SP1000
\$15⁹⁵

"Puzzle Pieces"
SILICON SPORTS
Mouse/Wrist Pad Set



\$10⁹⁵ each

TDK.

TDK 3.5" HD Disks



Sold in 10-packs only
79¢ each

*Reseller must have product in stock in order to qualify for price matching.

Qualify for Whole Earth Access
Financing and pay no interest on any computer purchase over \$500.
Minimum monthly payments required, and if not paid in full in 6 months, finance charges will accrue from date of purchase. Offer does not apply to consumer electronics products.

WHOLE EARTH

ELECTRONICS

SAN MATEO
Island Shopping Center
578-9200
M-F 10-9 Sat 10-6 Sun 11-6

SAN JOSE
3530 Stevens Creek Blvd
554-1500
M-F 10-9 Sat-Sun 10-6

Errors subject to correction.
Prices subject to change without notice.

An Interview
with
Alain Rossman

L · I · T · T · L · E Paradigm Shift

Personal Communicators
From EO By Mary Eisenhart



The first time I encountered Alain Rossman, he and Guy Kawasaki, then the leading lights of Apple's software evangelism effort, were at AppleFest in Long Beach, putting on an engaging dog-and-pony show designed to induce skeptical Apple II developers to write applications for the Macintosh—the survival of which was, at that point, highly questionable.

Eight years and three companies later, Rossman, his fervor and zeal unimpaired, is once again involved in the launch of a radically new product aimed at customers whose needs aren't being addressed by current computer technology. As president and CEO of EO, Inc., Rossman recently introduced Personal Communicators, tablet-sized devices with a pen-based operating system, plus bundled-in-ROM software that includes electronic mail, fax, a personal organizer, and PC connectivity, not to mention optional cellular phones and modems, at prices ranging from \$1999 to \$3299.

Since leaving Apple, Rossman cofounded two successful companies, Radius and C-Cube, a leader in video compression technology. In 1991, while serving as vice president of sales, marketing, and operations at C-Cube, Rossman was approached by fellow Frenchman Bernard Lacroute, a veteran of Sun and DEC and a partner at the venture capital firm Kleiner Perkins Caufield and Byers. Lacroute, it seemed, was working on a new startup, and dropped some tantalizing hints.

COMPU DATA

"A Name to Trust"

OUR SIXTH YEAR IN BUSINESS

Start Your New Year with Big Savings...

High Quality Products and Excellent Service

Save with Our...

Come Learn
How To Fly With Our...

CD486-66 EISA

- 8MB RAM
- 1.2 & 1.44 MB Drive
- 200MB HD 14ms
- Diamond Stealth VRAM 1MB
- SVGA Non-Interlaced .28 Dot Pitch
- 101 Keyboard/Tower Case
- 2 Serial, 1 Parallel, 1 Game Port
- MS DOS 5.0/Windows 3.1/3 Button Mouse

**\$2499
WOW!**

LANtastic
ARTISOFT INC.



CALL THE EXPERTS...

- Complete LAN 10 Base T, Special..... **\$674**
- Voice Adaptor for Lantastic..... **\$89**
- Central Station..... **\$479**
- Complete LAN for two users w/two 2MB cards (Version 4.1)..... **\$375**
- Complete LAN for two users w/2 16-bit Ethernet Cards (Version 4.1)..... **\$499**

The Fastest 486 System For Graphic Programs!

"I recently had a chance to work with a 50-megahertz 486 machine from CompuData, a San Francisco dealer and system integrator. The machine, which uses a local BUS motherboard and video controller, is truly a screamer. I thought my 486/33 was fast, but this one is 50% faster, according to the tests, and noticeably faster according to my eyes."

Lawrence Magid

CD 486-66 w/256K VESA

- 8MB RAM
- 120MB HD, 15ms
- 1.2 1.44 MB Drives
- SVGA .28 Dot Pitch Non-Interlaced
- SVGA Card - Local Bus Orchid Fahrenheit
- 101 Keyboard
- 32 Bit Local Bus IDE

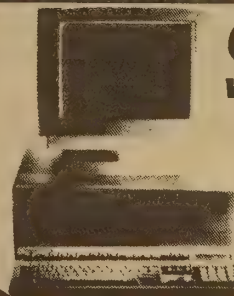
Includes: MS-DOS 5.0, Windows 3.1 & Mouse

Base System: American Made Motherboard, 1MB Memory, 1.2MB Drive, Read & Write Back Cache, Deluxe Case, Ami Bios, 2 Serial, 1 Parallel, 1 Game Port, 101 Keyboard, 1 Year Warranty on Parts, 2 Years on Labor.

CD486DX 50 EISA

- CD486-50 w/256 Cache
- 4MB RAM
- EISA IDE Controller
- 120MB HD 15ms
- 101 Keyboard
- SVGA .28 Dot Pitch
- SVGA Card w/1M
- 2 Floppy Drives
- MS DOS 5.0, Windows 3.1
- 3 Button Mouse

\$2049



CD486-33 w/256K CACHE

- 4MB RAM 70 ms
- 1.2 & 1.44 MB Drive
- 105MB HD 16ms
- SVGA 1M Card
- SVGA .28 Dot Pitch
- 101 Keyboard

**FREE
WINDOWS
3.1
DOS 5.0 +
MUSE**

\$1649

All Compu-Data Systems are Made In the USA

CD486SX-25

- 4MB RAM
- 1.2MB and 1.44 MB Drive
- 105MB HD 16ms
- SVGA 1M Card
- SVGA .28 Dot Pitch
- 101 Keyboard

\$1399

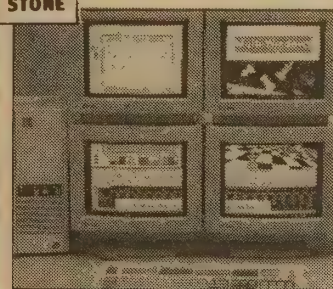
CD386-33 w/128K CACHE

- 4MB RAM 70ms
- 1.2 & 1.44MB Drive
- 105MB HD 16ms
- SVGA 1M Card
- SVGA .28 Dot Pitch
- 101 Keyboard
- MS DOS 5.0, Windows 3.1
- 3 Button Mouse

\$1299



STONE MICROSYSTEMS
(AUSTRALIA) PTY LTD



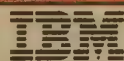
STOP BY FOR A DEMO TODAY!

"MultiWindows gives your PC the power to display Windows & Windows Applications on two or more screens. You can cut and paste between different applications by dragging the mouse across different screens"

CD386SX-25 w/64K CACHE

- 1MB RAM
- 1.2MB Floppy
- 40MB HD
- 2 Serial, 1 Parallel, 1 Game Port
- Monochrome System

\$699



- IBM 486-66 / 8MB RAM / 212MB HD **\$2585**
- IBM 486-33 / 8MB RAM / 120MB HD **\$1675**
- IBM 486SX-25 / 8MB RAM / 80MB HD **\$1275**
- IBM PS 386 SLC / 2MB RAM / 80MB HD **\$984**



- IBM Thinkpad 300 386SL-25 4/80MB **\$2299**
- IBM Thinkpad 700 486SLC-25 4/80MB **\$2699**
- IBM Thinkpad 700 486SLC-25 4/120MB **\$2849**
- IBM Thinkpad 700C Active Color 486SLC-25 4/120MB **\$4199**

415/495-3422



100% Financing Available
with Special Rates



Prices subject to change without notice. Prices reflect a 2% cash discount. Not responsible for typographical errors.



685 Folsom Street
San Francisco, CA

Parking Available
First 1/2 hr **FREE**

Mon. thru Fri 9:30-6:30
Sat. 11-5:00

"It seemed so mysterious and secret," laughs Rossman. "I was very intrigued, and as I talked more to people, I thought there was something incredibly exciting there—really, a convergence of technologies that would potentially allow us to create something new. It's very seldom that you really have the opportunity to create a new concept, a new platform. It's very rare. Companies with incremental improvements can be very successful—that's what Radius was. Those are easier, safer."

"But doing something really new—you only have such a chance every ten years or something. You have to have a combination of things—all the stars have to be aligned right. It's luck. Key technologies just become available, and they reach a threshold of usefulness, and they become cost-effective. Maybe they exist in the lab, but you can't use them, really—and suddenly, boom! there is an opportunity to create something new. The Mac was one such giant opportunity for a real shift and creating something very different."

"So I saw that same thing here, and it was hard then to predict how long it would take, how big it would be eventually, but I was totally convinced it would be very big."

Rossman joined Lacroute's startup when it was a month old, in September 1991. The company was dubbed EO, from the Latin verb "go"—partly because of the connotations of mobility, and partly as a little in-house joke since so many of the company's first employees were recruited from GO (whose PenPoint operating system is integral to the Personal Communicators).

From the outset, EO's founders realized that its products had no chance without some strategic alliances. Says Rossman, "Bernie had thought through that, and concluded that you could not run such an ambitious project without the backing of large corporations. You just couldn't do it."

"If you follow that thread of thought, you go, 'Who are the obvious partners?' And when you do something that's as communication-centric as what we're trying to do, AT&T is it, in the United States. You've got financial depth, you've got technology resources and all the stuff you're looking for. Very shortly thereafter, the deal was closed with AT&T."

"So the company was designed that way from the start. It was not an afterthought—it was the way the business plan was designed."

By December of 1991, the company had investments from AT&T, Matsushita, and Marubeni, as well as venture capital from Kleiner Perkins. In addition to its investment, AT&T contributed vital technology to EO's product—its low-power, high-performance Hobbit RISC chip is the Personal Communicator's CPU, its EasyLink mail service is included with the product, and the Personal Communicators will be sold in AT&T's Phone Centers.

Likewise, Matsushita contributed manufacturing resources and Marubeni, a powerful global trading company, brought worldwide sourcing and distribution support. In addition, the Personal Communicators include applications from GO (in addition to the PenPoint OS, mail, fax, and notepad software are bundled in ROM), Sitka (PenTOPS and PenCentral, which allow the exchange of files with the user's PC), and PenSoft (Personal Perspective, an organizer that includes a calendar,

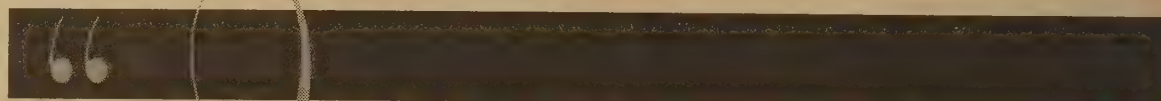
to-do list, address book, and note-taker).

Currently in beta tests at sites including Aetna Insurance and Levi Strauss, the Personal Communicators are scheduled for quantity shipment in the second quarter of this year. As with all risky new technology, of course, it remains to be seen whether EO will go the way of Macintosh or go the way of the now-defunct Momena.

But in a mood highly reminiscent of the early Macintosh days, Rossman shows a lively awareness of the hazards, and unbounded enthusiasm for the possibilities. (EO, Inc. 415/903-8100)

Clearly what you have is very cool technology, but the Valley is littered with dead companies that had cool technology.

No kidding! [laughs]



If you look at how the units are used and what they do, you find a lot of commonality. They are used by field personnel—sales, marketing, support, customer-oriented people who are outside of the office a lot. And if you asked the companies we worked with why they want this kind of unit, they all have almost the same goal—they are trying to shorten the information cycle for people far away from the office."

Beyond being cool, the technology has to be useful and have a market. So what do you see as the market here?

[laughs] That's the way you are. You want usefulness.

Well, the people with the checkbooks like usefulness.

[laughs] That's absolutely true.

We think that what we have is not only cool but quite useful. It's clear that it's the first product of a new category that will evolve, that will improve in every dimension. The sophistication of the software three years from now—we'll see a lot of breakthroughs on that front. We'll see more integration. We'll see lower costs. That's the nature of this business. A lot will change over the next few years. The rate of change will be very high because it's so new, because so much has to be invented. We're not in that stabilized form that the PCs have reached.

You're sort of at the 128K Macintosh stage, though given the difference in capability that's not a completely accurate way to look at it.

Exactly. It's new. It's very new. So we have to learn how to make it better, and customers have to learn why they are useful. Both sides are true. Personal Communicators are quite useful today, and they'll be more useful tomorrow, and they'll be cheaper over time.

Now we recognize that it will take a while. I've been through that at Apple—that process of the company learning and the market learning. The Mac was useful even when it came out—the truth is it took a while for the market to learn that, and it took a while for Apple to learn how to make it better, too.

I think the same will happen here. You don't escape that, it's just the way things work. It's almost a function of how the human mind works. I still remember the *Wall Street Journal* explaining why the Mac was the most stupid idea they had ever seen—that it had this packet-of-cigarettes-size thing called a mouse on the side that nobody would ever use. They had a whole study on the front page, of how nobody would ever use it, it was very inconvenient...

And those guys were wrong. They had no vision, no understanding of the future. It took a while for those guys to learn and use it, and of course now it's not even a question whether you want a mouse or not. You probably walk into the *Wall Street Journal* office, and they have PCs with Windows and mice everywhere.

That learning process on both sides will take a few years. What that tells us is we have to have staying power.

That's why the Valley's littered with dead companies. Two reasons—one is they really don't do useful things, you're right, they just play with technology. That's not what we think we're doing. We think we're doing something very useful that has to be proved, and has years of innovation and improvement ahead of it.

The other reason is that they had something that could be useful over time, but they didn't get there. They didn't make it. They didn't have the staying power to get there. It would have been great—it just took two more years and they didn't have the money.

Before the world was ready for it, they ran out of capital.

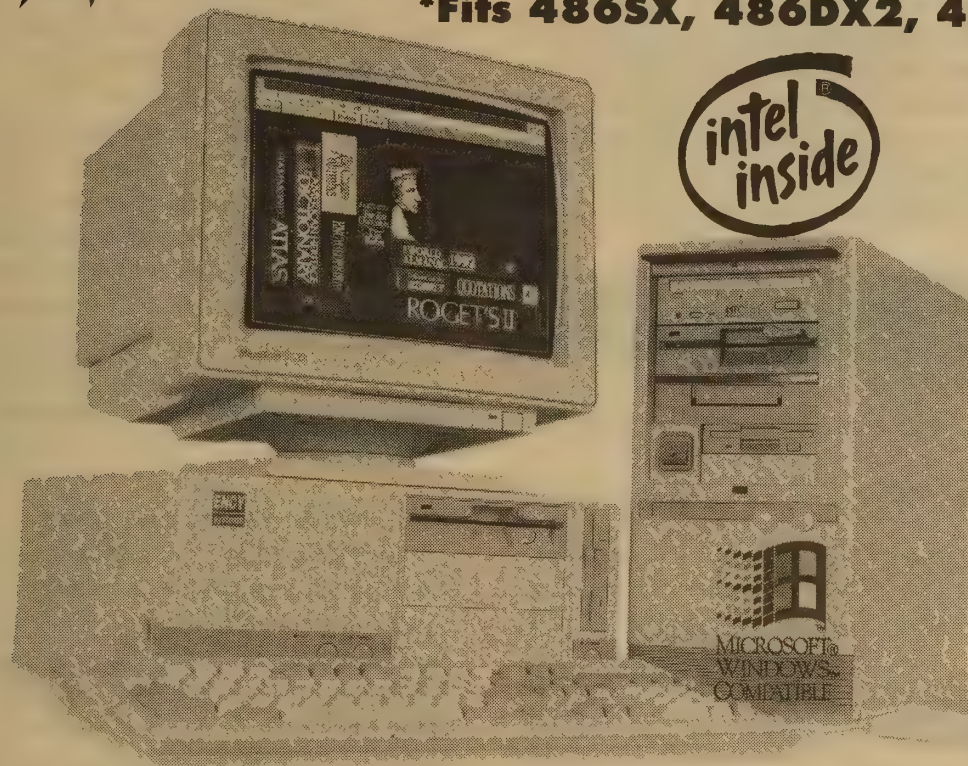
Or before the technologies they needed were available. Before they figured out how to make it right. It goes both ways.

And that's why we've aligned ourselves with large, powerful, financially strong companies



TRUE COLOR VESA LOCAL BUS ONE BOARD FITS ALL!

*Fits 486SX, 486DX2, 486DX and P24T



TRUE COLOR

- 4 MB 70 ns RAM expandable to 32MB
- 64KB Cache
- 210 MB IDE Hard Drive
- 1.44 & 1.2 MB Floppy Drive
- 32 bit True Color VESA Local Bus graphics accelerator with 1 MB
- CTX 14" 1024NI SVGA with .28 DP
- 101 Enhanced Keyboard
- 2 serial, 1 parallel, 1 game ports
- Mini Tower or Desktop case

GUT STATION

- 8 MB 70 ns RAM expandable to 32MB
- 256KB Cache
- 210 MB IDE Hard Drive
- 1.44 & 1.2 MB Floppy Drive
- 15" Flat NI SVGA with .28 DP
- 32 bit True Color VESA Local Bus graphics accelerator with 1 MB
- Maxi-Switch/Focus 101 Keyboard
- 2 serial, 1 parallel, 1 game ports
- Mid Tower case with 2 fans

2%
Discount
with Cash

INTEL 486DX-33 \$1539
INTEL 486DX-50 \$1685
INTEL 486DX2-50 \$1645
INTEL 486DX2-66 \$1775

INTEL 486DX-33 \$1850
INTEL 486DX-50 \$2000
INTEL 486DX2-50 \$1965
INTEL 486DX2-66 \$2100

MONITORS

14" 1024SVGA .39	\$215
14" 1024SVGA .28INT	\$255
14" 1024SVGA .28NI	\$286
15" 1024 FLAT .28NI	\$440
17" 1280 FLAT .28NI	\$810
Viewsonic 1	\$225
Viewsonic 4	\$282
Viewsonic 5E	\$393
Viewsonic 5+	\$480
Viewsonic 6E	\$330
Viewsonic 6FS	\$549
Viewsonic 7	\$980
Viewsonic 8	\$1542
NEC 3FGX	\$635
NEC 4FG	\$738
NEC 5FG	\$1255
MAG MX15F	\$560
MAG MX17F	\$1030
NANAO F550i	\$1050
SONY 1304	\$565
SONY 1604	\$985

VIDEO CARDS

SVGA 256K	\$25
SVGA 512K	\$38

SVGA 1M	\$55
Diamond 24X	\$148
Diamond Stealth 24VLB	\$158
Orchid Fahrenheit 24	\$154
Orchid Fahrenheit 24VLB	\$158
GENOA 8500 VLB	\$125
ATI Ultra Pro w/2M	\$415

HARD DRIVES

Seagate 107	\$200
Conner 80	\$182
Conner 120	\$220
Conner 210	\$327
Conner 540	\$845
Maxtor 130	\$225
Maxtor 210	\$327
Maxtor 340	\$563
Western Digital 210	\$322
Western Digital 340	\$500

MB+CPU

386DX-40-64K	\$176
486DX-33-64K VLB	\$440
486DX-50-64K VLB	\$590
486DX2-50-64K VLB	\$545
486DX2-66-64K VLB	\$680
486DX-33-256K EISA	\$620

486DX-50-256K EISA	\$729
486DX2-66-256K EISA	\$860
UltraStor 24F EISA SCSI	\$390

MISCELLANEOUS

Panasonic 1180i	\$158
Panasonic 1123	\$203
Panasonic 1124i	\$288
Panasonic 1624	\$343
Panasonic 4410	\$624
TEAC 1.2	\$54
TEAC 1.4	\$47
Chinon 1.2	\$50
Chinon 1.44	\$45
Colorado 120	\$194
Colorado 250	\$240
Chicony 101	\$20
Maxi 101	\$30
Keytronic 101	\$35
Focus 2001	\$35
Focus 9001	\$65
2400 Int Modem	\$30
96/24 Fax/Modem	\$60
3 Button Hi-Res Mouse	\$12
TrackBall	\$25
Creative Upgrade Kit	\$525

BEST BUY

- 4 MB 70 ns RAM expandable to 32MB
- 64KB Cache
- 120 MB IDE Hard Drive
- 1.44 & 1.2 MB Floppy Drive
- CTX 14" 1024INT SVGA with .28DP
- 24 bit Windows Accelerator with 16 million colors
- 101 Enhanced Keyboard
- 2 serial, 1 parallel, 1 game ports
- Mini Tower or Desktop Case

AMD 386DX-40 \$1090
INTEL 486DX-33 \$1350
INTEL 486DX-50 \$1500
INTEL 486DX2-50 \$1460
INTEL 486DX2-66 \$1595

CYRIX 486-33

- 4 MB 70 ns RAM expandable to 32MB
- 64KB Cache
- Built-in math coprocessor
- 120 MB IDE Hard Drive
- 1.44 & 1.2 MB Floppy Drive
- CTX 14" 1024INT SVGA with .28DP
- SVGA with 1 MB
- 101 Enhanced Keyboard
- 2 serial, 1 parallel, 1 game ports
- Mini Tower or Desktop Case

CYRIX 486-33 \$1199

2%
Discount
with Cash

Service and Warranty

- ◆ 2 years parts*
- ◆ 5 years labor
- ◆ On-site service available
- ◆ 30 day money back*
- ◆ Unlimited Free Tech Support
- ◆ Free Software Installation



Business Hours (PST):
Mon-Fri: 8:30 to 5:30
Saturday: 10:00 to 4:00

- *2% discount with cash
- * Freight, software, printer & special order items are not refundable.
- * One year warranty for disk drives.
- * Price and availability are subject to change without notice.
- * 15% restocking fee within 30 day, no refund after 30 day
- * The Intel Inside Logo is a trademark of Intel Corporation.
- * All products referenced herein are trademarks of their respective companies.

ENCY

systems

(510) 226-1848

Fax: 1-510-226-0560

46743 Fremont Blvd., Fremont, CA 94538

which are in this thing for the long run. You see, that's where the venture capital community cannot support you enough. They're great—

But their timeline is too short.

Yeah. It's just their job. They have investors who are waiting for their return, and they better show it or they don't get the next round. That's their job.

So we have aligned ourselves with people whose timeline is longer, because they also want the market to happen. They'll try to do something to make it happen faster. And that's why we think we can escape the curse of new, innovative technologies, which always take a while to develop.

That was the key to our thinking when we started the company. We saw that it would take a long time. We saw what you say—a lot of companies with great

They're trying to avoid downtime. They want their employees to be able to be in touch, wherever they are. They are trying to reduce some of the paper overhead for those people in the field. These are the common traits you find in all the applications that we have.

The other common trait is that they are usually successful companies which are aggressive with technology. The reason everybody is talking to the pharmaceutical companies is because it's one of the areas where America is first in the world, totally dominant, the way we were dominant in silicon in the '70s. They are very successful on Wall Street, they're very rich, they're very aggressive, they like technology, and they have the resources just to invest in their people. So they are prime candidates, and they are willing to spend the money now.

for them. The level of software-hardware integration they can get is as good as it gets.

Another aspect that I was surprised about is price/performance. They feel—and I have the math from customers—that what it would take them to get something with notebook technology, which would not be as easy or as integrated, but would do something similar, would be much more expensive. Sure the notebook is \$1400 today, or whatever, but the good one they want is \$2000. But then you need to add Windows, the drivers, and the modem technology and the email package—if you add what they have to do, they find it to be not only hard but expensive.

The one that comes back at the end of the day is that they feel their users are going to use it more. It's centered around what they want to do, which is essentially send and receive messages—to headquarters, to their customers, to suppliers. Call people. Fax. Take notes. Most of the customers we talked to—not all of them, but a good eight out of ten—are developing a custom app on top. A specific application which is really custom to their own way of working.

Their MIS people are doing that?

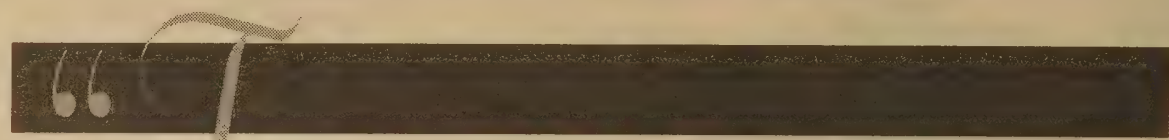
That's done in MIS, and very often with VARs. We're learning that there is a VAR community out there of people who love to get those contracts and build applications for large companies.

They feel that the net result is so much better when the guy can be taking an order from a doctor by writing, and have the database of all the doctors he works with, and the history. For the pharmaceutical industry you have a very unique circumstance that I should mention—the legal requirement is to capture the signature from the doctor when he orders. And that definitely does not work on the notebook. So in that specific industry they have a compelling reason, above and beyond anything else, which makes it a very elegant solution for them, because this electronic signature is valid legally. And they can store it electronically the way they want, and they can actually, with the cellular phone attachment we have, send it to headquarters on the spot from the guy's parking lot. That's what they want. That's exactly what they want.

To what extent are you finding that those users need to communicate with conventional computers and computer networks?

To a great extent. [laughs] We have some demand for Macintosh connectivity, which we don't have in our first product. We have good PC connectivity, and it's used extensively by our customers. They will dial into their file servers and download files, upload files. They will want to have gateways to their corporate mail systems.

Understand now that the sample we have is a very biased sample—it's Fortune 500. Next year we'll have customers like you and me—people who buy them for a group of ten, who buy two—the bottom-up people. We don't have those yet. And so that sample we have is extremely biased toward connecting to the corporate networks. If we did not have PC connectivity, I think we would have lost most of the customers we have today. They would say, "We can't use it!"



They want PC connectivity because they want to get the data back and forth, which we do quite elegantly. Few of the customers we've talked to have mentioned that they want to run the same application. They don't like those applications. They're trying to get their users to use the system, and to get that experience of something that's very direct, very simple."

technologies just dying, or being acquired prematurely and really losing the technologies in ways that were just not good. And we think we've created a new model, a model that will allow us to get where we want to be, and be strong when we get there.

You have some units out in beta test right now. Who's using them and what are they being used for?

They are all in large corporate accounts right now, because they have the feature that it's pretty controlled; they give us an opportunity to create seeds for sales, which is what we want, first and foremost. So we identified about thirty so-called advanced customers who span the spectrum from pharmaceutical companies to insurance companies to apparel companies, to more exotic things like a rep company for beauty products. If you look at the industry segmentation, you don't find much commonality. You're hard pressed.

Now if you look at how the units are used and what they do, you find a lot of commonality. They are used by field personnel—sales, marketing, support, customer-oriented people who are outside of the office a lot. And if you asked the companies we worked with why they want this kind of unit, they all have almost the same goal—they are trying to shorten the information cycle for people far away from the office. They are trying to find a way to make these people communicate faster, better, with headquarters, with their suppliers, with their customers. They're trying to get more responsive.

You'll find that all the companies we work with are just on top of their industries. They are the early adopters. They're just very successful in their fields.

At this point their alternatives to using Personal Communicators would be either using notebook computers or using something like GRiDpads. What do Personal Communicators offer that those two alternatives don't?

Obviously they have access to about every possible notebook that you can dream of, and they have concluded that that's not what they want.

When you talk to them, they have a combination of probably three or four factors that come as a whole in their mind. There is the integration/weight/size aspect—we have the pen technology, the RISC technology, all these things make the unit smaller, lighter, faster. That's very attractive. We have a pharmaceutical company where two-thirds of the sales force is women, and they feel that size/weight is a key consideration. They have a lot of problem with notebooks just not being used because people don't want to carry them around.

Another aspect which is mentioned very often is that the tight integration of communication capability turns out to be very key for them. It goes both ways—they are thinking about their users, the simplicity, the ease of use, the natural aspect of the interface; and then they are thinking about their MIS guys who have to configure, who have to buy options, who have to install drivers, and all these things. And they think it's a much better solution

WE SELL QUALITY, RELIABILITY, SERVICE & TECHNOLOGY!!

** PromoX SS II-40 WORKSTATION **

\$5995

SUN SPARC II-40 MHz 100% Compatible

40 MHz SPARC™ Integer Unit/Floating Point Processor,
64K Write Through Cache, Three S-bus Expansion Slots,
32MB RAM, Sync SCSI Controller, 2 RS-423 I/O Ports, 15-pin Ethernet
Port, Desktop Case, Keyboard, Mouse, 200 MB Hard Drive, GX Graphics
Accelerator, 17" Color Monitor (.26mm), SUN Solaris OS 1.0
(Includes SUN OS, Sunview and Openwindow)

UPGRADE SPARC™ I + TO SPARC™ II-40\$1650

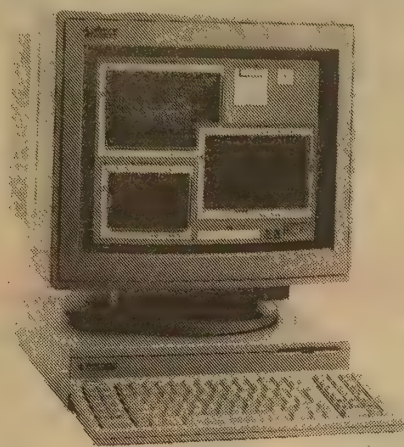
S-BUS Fax/Modem with S/W\$895

*** X TERMINAL/SERVER ***

X Terminal 14"/17" Color Monitor\$1745/1945

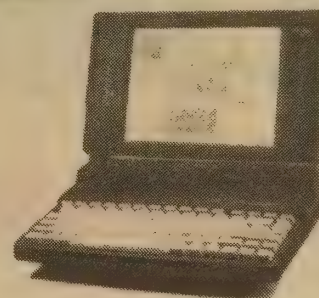
X-Net (XII/R5 Server, For DOS, TCP/IP, PC/NFS, FTP, TELNET) 245

→ Come see our new technology—Multi-
Network Environment



**ONE YEAR
ON-SITE SERVICE !
BUY SS II AND GET
X NET KIT FREE!**

** NOTEBOOK COMPUTER **



**5 HOUR
BATTERY!**

Supports UNIX/XWINDOWS Driver!

386SX-25/386SL-25/386DXL-33 MHz with 4/8MB RAM,

1.44 MB FD, 80/120/200 MB HD\$BEST

486DX-50/486DX-33/486SX-25 MHz with 4/8/16MB RAM,

1.44 MB FD, 80/120/200 MB HD\$BEST

486DX-33/486SLC-25 MHz COLOR with 4/8/16MB RAM,

1.44 MB FD, 80/120/200 MB HD\$BEST

*** UNIX FOR PC ***

PromoX UNIX V Rel 4:

PromoX UNIX SVR4 2-users Complete Set\$649

A licensed version of AT&T UNIX SVR4 with the following features:
SUN OS, BSD and XENIX Extensions, Networking Support, Streams,
BSD Socket Interface, TCP/IP and Internet Utilities, NFS, RFS, DFS,
PC-Interface (dosdir, doscopy...), ANSI C Compiler, Lint, gdb, lprof,
Cscope, make, sccs, lex, yacc, GNU C++,
includes PromoX Graphics User Interface

PromoX Graphics User Interface\$295

High resolution, Best Performance X Server (1280x1024 96K

X Stones), Motif 1.2 GUI X11, R5, Xt, and Motif Widget Libraries

ESIX UNIX V Rel 4:

Run-Time 2-User License\$420

Run-Time with Networking 2-User License 460

Software Development Kit 245

Graphics user interface Kit 2 User 560

SunSoft/Interactive UNIX

Interactive UNIX/386 Operating\$350

Interactive UNIX/386 Application Platform 625

UNIX/386 Network Platform 835

UNIX/386 Workstation Platform 975

UNIX/386 Workstation Developer 1675

SCO UNIX/XENIX:

SCO Open Desktop Personal (Tape)\$975

SCO Open Desktop Server Upgrade (Tape) 1045

SCO Open Desktop Server System (Tape) 1815

SCO Open Desktop Development System (Tape) 1255

SCO UNIX (2 User) 395

SCO UNIX (3+ User) 895

SCO UNIX Development 895

SCO XENIX OS (1-2 Users) 395

SCO XENIX OS (3+ Users) 625

*** NETWORKING ***

SilverNet Starter Kit (the Fastest Peer-to-Peer Network)\$285

Novell Netware\$BEST

8-Bit Arcnet Card (Star/Bus) 45/50

16-Bit Arcnet Card (Star/Bus) 70/75

NE-1000 Compatible 8-bit Ethernet Card (Coax/10 Base T) 70/75

NE-2000 Compatible 16-bit Ethernet Card (Coax/10 BaseT) 75/80

Arcnet 8-Port Hub 120

10 BaseT 8 Port Hub 250

10 BaseT 12 Port Intelligent Hub 625

SMC (Western Digital) 8-bit Ethernet Card (Coax/10BaseT) 130/175

SMC (Western Digital) 16-bit Ethernet Card (Coax/10BaseT) ..160/180

WD8003E 8-bit 85

SMC/3COM/NE2000 16-bit Compatible Combo Board (BNC+AU+10BaseT) 105

Pocket LAN Card 185

3 Com 3C503 Ethernet II 170

Token Ring Adapter 16/4 Mbs 425

8 Port Token Ring STP/UTP/MAU 345

8 Port Intelligent Multi-User Card (RS232) 299

3/486 UPGRADABLE LOCAL BUS SYSTEMS

486/66 MHz\$1045

486/50 MHz 925

486/33 MHz 775

486SX/25 MHz 610

386/40 MHz 515

386/33 MHz 505

ONE YEAR ON SITE SERVICE

•4 MB, 128K Cache

•2 VESA Local Bus,

5 16-bit ISA Bus,

1 8-bit ISA Bus Slots

•1.2 MB or 1.44 MB Floppy Drive

•IDE Controller w/2S/1P/1G Ports

•101 Key Enhanced Keyboard

•Mini-Tower Case w/200 W Power Supply

•PC Users Guide

**SPECIAL PRICE
FOR DEALERS/VAR
ON VESA LOCAL BUS
MAINBOARD
& VGA CARD**

ONE YEAR PARTS, TWO YEAR MAINBOARD, THREE YEARS LABOR WARRANTY

Video Card Options:

Accumose (with Window Accelerator) 512K VGA Card\$40

Trident 1 MB VGA Card 56

Tseng Labs ET4000 1MB VGA Card 78

Tseng Labs ET4000 1 MB VGA Card Hi-Color 98

Diamond SpeedStar 24X 160

Diamond Stealth 1MB VRAM VGA Card 200

Orchid Fahrenheit VA 170

ATI Graph Ultra 240

Local Bus Cirrus Logic 105

Local Bus ET4000 1MB VGA Hi-Color 120

Local Bus S3 Chip 1MB VRAM VGA Hi-Color 135

Local Bus IDE Controller 60

Monitor Options:

14" Mono\$90

14" SVGA Mono (1024x768) (.28mm) 110

14" SVGA (.28mm) 270

14" NI SVGA (.28mm) 310

14" VESA NI SVGA (.28mm) 70Hz 340

14" ViewSonic NI SVGA (.28mm) 345

CTX 15" NI SVGA (.28mm) 425

15" Hitachi SVGA (1024x768 .28mm) 540

15" NEC 4FG (1024x768 .28mm) 775

17" Nanao F550i SVGA (.28mm) 1120

17" Samsung NI SVGA (.31mm) 750

17" Samsung NI SVGA (1280x768) (.26mm) 910

Hard Drive Options:

40MB\$145

80 MB 210

120 MB 235

Conner 540 MB 12ms (IDE) 900

Fujitsu 520 MB 9ms (SCSI) 900

Maxtor 200 MB 15ms (IDE) 345

Maxtor 340 MB 13ms (IDE/SCSI) 610

Maxtor 650 MB 15ms (SCSI) 1090

Maxtor 1.2 GB 14ms (SCSI) 1350

Maxtor 1.7 GB 13ms (SCSI) 1615

MULTIMEDIA KIT

*350ms CD-ROM

*Gallant Sound Card

(Sound Blaster & MDU-401 Compatible)

*Microphone

*Voice Kit

*Speakers

*5 CD-ROM Titles For Windows

\$400

**UNIX / NOVELL
NETWORK
INSTALLATION /
MAINTENANCE
CALL**

Some Of Our Satisfied Customers:

• AMD
• Cadence
• DCA
• Ford
• Fujitsu

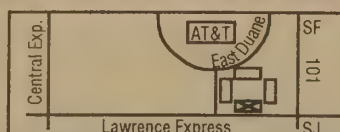
• IBM
• ISSI
• Lockheed
• McAfee
• Microsoft

• Quantum
• Sony
• Stanford Univ.
• U.S. Postal Service
• Winbond

PromoX Systems

1050 East Duane Ave., Suite B
Sunnyvale, Ca 94086

Sparc & SUN registered trademarks of SUN Microsystems Inc..



**Tel: (408) 733-2966
Fax: (408) 733-2968**

E-Mail Address: promox@cup.portal.com

Hours: Mon-Fri 9-6 Sat 10-4

Prices Subject To Change W/O Notice



COMPUTER WERX ONE STEP AHEAD

AST-POWER EXEC, POWER PREMIUM AND BRAVO SYSTEMS OFFER THE MOST INNOVATIVE AND COMPREHENSIVE ARRAY OF STATE-OF-THE-ART TECHNOLOGY AVAILABLE TODAY. WHEN THINKING ABOUT YOUR NEXT COMPUTER SYSTEM...
...THINK AST & COMPUTER WERX...

AST
Authorized Systems
Reseller

Standard Features:

- 4 MB of RAM Exp to 20 MB
- 3.5" 1.44 MB Floppy
- 2.5" Removable Hard Disk
- LCD/External Monitor Simultaneous Display
- Two PCMCIA, Type II Expansion Slots
- PowerPack NiMH Battery Pack
- Flash BIOS
- 82-Key Keyboard, 12 Dedicated Function Keys, 3mm Travel
- 1 Serial/1 Enhanced Parallel/1 Mouse/1 Ext Monitor
- One Expansion Port/For Power Station, Easy Port
- Up To 6.5 Hours of Battery Life
- Available with 60, 80, 120 and 160 MB Hard Drive
- MS-DOS 5.0
- One Year Limited Warranty



POWER EXEC 3/25 SL Includes:

- *386SL, 25 MHz Processor
- *64KB RAM Cache
- *4 MB RAM Exp to 20 MB (5 volt)

POWER EXEC 4/25SL Includes:

- *486SL, 3.3 volts, 25 MHz Processor
- *8KB Internal Cache
- *4 MB RAM Exp to 32 (3.3 volt)

POWER EXEC Monochrome

- *CCFT Sidelit Film Compensated Supertwist
- *64 Gray Scales

POWER EXEC Color

- *Passive F_STN Color Display
- *256 Colors

POWER EXEC Color Plus

- *Active-Matrix Color Display
- *256 Colors

MORE REASONS TO BUY AST

- Novell Certified, Novell Labs Tested and Approved
- Runs OS/2, UNIX, DOS NETWORK and ZENIX
- Customers Satisfaction Guaranteed
- Expert Technical Support
- Standardized by Most Corporate Companies
- Expandable, Upgradable
- More Features, Performance, Power, Reliability and Compatibility for LESS MONEY!



**AST
BRAVO 4/25s
BRAVO 3/33s**

BRAVO 4/25s

- Intel 486SX-25 MHz Processor
- Integrated 8 KB of Cache
- Support for Intel OverDrive Upgrade

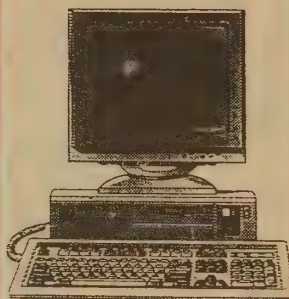
- Support for Optional i487SX Numeric Co-Processor

BRAVO 3/33s

- Support for Optional 387SX Numeric Co-Processor

Standard Features

- 2 MB RAM Expandable To 16 MB (3/33s) to 64 MB (4/25s)
- 1.44 MB 3.5" Floppy Drive
- 512K Video RAM Support For 1 MB Video RAM
- Support For 1024x768 Resolution
- 101-Key Height-Adjustable Keyboard
- One Year Limited Warranty



**AST
BRAVO 4/33
BRAVO 4/33s**

BRAVO 4/33

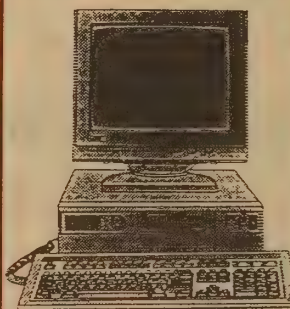
- Intel DX486 33 MHz Processor
- Integrated 8 KB of Cache
- Support for Intel OverDrive Upgrade

BRAVO 4/33s

- Intel 486SX 33 MHz Processor
- Integrated 8 KB of Cache
- Support for Optional i487SX Numeric Co-Processor

Standard Features

- 2 MB RAM Expandable To 64 MB On System Board
- 1.44 MB 3.5" Floppy Drive
- 512K Video RAM Upgradable to 1 MB Video RAM
- MPC- (Multimedia Personal Computer) Compatible
- 101-Key Height-Adjustable Keyboard
- 2 Serial, 1 Parallel, 1 Mouse Port
- One Year Limited Warranty
- Integrated Ethernet (Model 3n only)
- One Year Limited Warranty



**AST
POWER PREMIUM
3/33, 3/25**

- 4 MB of RAM Standard (2 MB for 3/25) Expandable to 80 MB

- Microsoft Windows Models with 8 MB RAM, 210 MB HD Drive
- Factory Installed MS Windows 3.1, MS DOS 5.0, Mouse and AST Mouse Pad

- Integrated Premium VGA

- AST FlashBIOS (simplified software-based BIOS upgrade)

- Cupid-32 Upgradability

- 1.44 MB 3.5" Floppy Drive

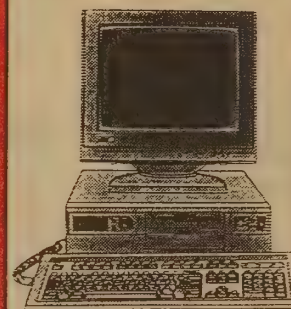
- 5 Available 32-Bit EISA Expansion Slots (ISA Compatible)

- Integrated Floppy Controller/Connector and IDE interface

- 101/102 Key Keyboard

- 2 Serial, 1 Parallel, 1 Mouse Port

- One-Year Limited Warranty



**AST
POWER PREMIUM
4/66d, 4/50d
4/33, 4/25s**

- 4 MB of RAM Standard (8 MB for 4/66) Expandable to 80 MB

- Microsoft Windows Models with 8 MB RAM, 210 MB HD Drive
- Factory Installed MS Windows 3.1, MS DOS 5.0, Mouse and AST Mouse Pad

- Integrated Premium VGA

- AST FlashBIOS

- Cupid-32 Upgradability

- 1.44 MB 3.5" Floppy Drive

- 5 Available 32-Bit EISA Expansion Slots (ISA Compatible)

- Integrated Floppy Controller/Connector and IDE interface

- 101/102 Key Keyboard

- 2 Serial, 1 Parallel, 1 Mouse Port

- One-Year Limited Warranty



**AST PREMIUM
SE 4/66d, 4/50d,
Premier Servers**

- 16 MB of RAM Standard, Exp. to 32 MB on the Processor Board, 80 MB Total System

- 256 KB Second Level Copy Back Cache

- AST FlashBIOS

- 1.44 MB 3.5" Floppy Drive

- 3 External Accessible Half-Height Drive Bays

- 8 Internal 3.5" Drive Bays on Models 33, 503, 1003

- Cupid-32 Upgradability

- Ten 32-Bit EISA Expansion Slots

- Integrated Floppy, IDE Interface

- Three Level Password Protection and Chassis Lock

- 101/102 Keyboard

- One Year Limited Warranty

AST, AST logo registered,
PowerExec, EasyPort and
SmartPoint registered
AST Research, Inc.

CALL FOR PRICING ON AST COMPUTERS

AST, AST logo and Premium
registered and Cupid-32,
Cupid-32 trademarks
AST Research, Inc.



**2372 QUME DRIVE, SUITE F
SAN JOSE, CA 95131
TEL: (408) 954-0490 Fax: (408) 954-0496**



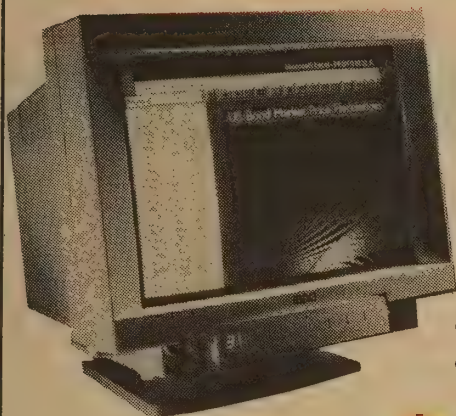
COMPUTER WERX

ONE STEP AHEAD

COMPUTER WERX Brings You The Best Monitors In The World.....
The MAG Monitor! They are PC World Best Buys and Editor's Choice
of PC Magazine. For The BEST PRICE, BEST IMAGES &
BEST TECHNOLOGY, Pick MAG MONITORS & COMPUTER WERX!!

MAG MX 15F

15" SVGA MONITOR



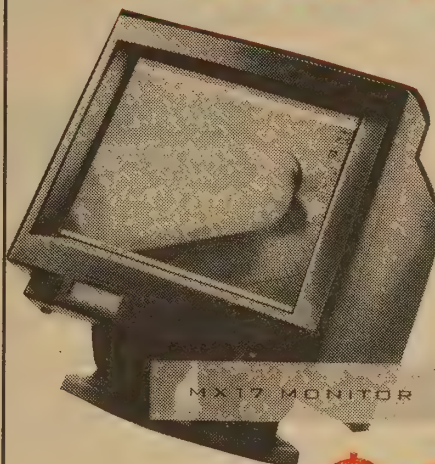
- 1280x1024 Non-Interlace
- VGA, VESA, SVGA, MAC II Compatible
- 0.26mm Dot Pitch
- LED Displays
- Current VGA Mode
- Flat Tube
- Flicker-Free Display



\$585

MAG MX 17

17" SVGA MONITOR



- 1280x1024 Non-Interlace
- VGA, VESA, SVGA, MAC II Compatible
- 0.28mm Dot Pitch
- LCD Displays
- Current VGA Mode
- Flat Tube
- Flicker-Free Display



\$1087

BASE SYSTEMS INCLUDE: 3.5" 1.44 MB Floppy Drive, 1 MB RAM,
AMI BIOS, SIS Chipset, Mini-Tower Case, IDE Controller, One Serial, One Parallel Ports & 101-Key-board.

486SX/25, 128K
\$418

486SX/33, 128K
\$499

486DX/33, 128K
ISA **\$605**
EISA **\$775**

486DX2/50, 128K
\$748

486DX/50, 128K
ISA **\$770**
EISA **\$952**

486DX2/66, 128K
ISA **\$869**
EISA **\$1049**

SPECIAL OF THE MONTH: MICROPHONE II COMMUNICATIONS SOFTWARE FOR WINDOWS ..\$165

VIDEO CARDS

#9 GX1 Level 21	\$655
#9 GX1 Level 23	723
#9 GX1 Level 25	1182
#9 GX1 Level 29	1511
Accumos 256K	30
ATI Ultra Graphic/1 MB	305
Diamond Speedstar 24X	156
Diamond Stealth 24	164
Methus Premier 1280NI	285
Trident/1 MB	57
Trident/512K	99

MONITORS

14" SVGA 1024x768 .28	\$263
14" SVGA 1024x768 NI .28	295
14" SVGA 1024x768 .39	220
15" Flat 1280x1024 NI .28	510
17" Flat 1280x1024 NI .26	888
Hitachi CM1584MU/15"	494
Hitachi CM1785MU/17"	1012
Hitachi CM2085MU/20"	1315
Hitachi CM2187/21"	2194
Idek MF5221/21"	1932
Idek MF5421/21"	2290
Idek MF8317/17"	1070
Mag MX15F/15"	585
Mag MX17F/17"	1087
Mono VGA 640x480	139
Nanao F5501/17"	1075
Sony 1304S	588
Sony 1604S	1039
Sony 1936/20"	1999
VGA 640x480 .51	178

HARD DRIVES

Conner 120 MB SCSI 15ms	\$345
Conner 120 MB IDE 19ms	CALL
Conner 200 MB SCSI 12ms	368
Conner 212 MB IDE 12ms	CALL
Conner 40 MB IDE 27ms	143
Conner 80 MB IDE 19ms	210
Conner 540 MB IDE 12ms	913
Maxtor 80 MB IDE 19ms	220
Maxtor 120 MB IDE 15ms	236
Maxtor 120 MB SCSI 15ms	242
Maxtor 213 MB IDE 15ms	352
Maxtor 213 MB SCSI 15ms	363
Maxtor 340 MB IDE 13ms	588
Maxtor 340 MB SCSI 13ms	599
Maxtor 535 MB IDE 12ms	902
WD 125 MB IDE 15ms	242
WD 212 MB IDE 14ms	360
WD 85 MB IDE 17ms	200

ACCESSORIES

2400 Int. Modem	\$38
3 Button Mouse	18
9600/2400 Int. Fax	69
Colorado 120 MB	188
Colorado 250 MB	250
Desktop Case/UL/LED	73
DR DOS	30
Full Case/UL/LED	106
Med. Tower Case/UL/LED	91
Mini Tower	53
MS DOS 5.0	40
MS Windows/Mouse	55
Power Chute Plus	68
Teac 5.25" FD	58
UPS 1250	810

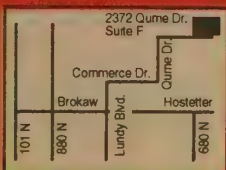
PC SOFTWARE

Adobe Illustrator/Windows	\$355
Lotus 1-2-3/Windows	296
MS C++, Dev Kit	247
MS Excel/Windows	298
MS Office/Windows	462
MS Power Point/Windows	305
MS Project/Windows	410
MS Windows 3.1	89
MS Word/Windows	296
MS Works/Windows	124
Norton Utilities	107
PageMaker 4.0	495
Persuasion/Windows	313
Turbo C++/Windows	99
Word Perfect/Windows	265

MAC SOFTWARE

Adobe Illustrator 3.2	\$355
Adobe Photoshop	533
FileMaker Pro 2.0	245
MacDraw II	247
Microphone II	130
More 3.1	246
MS Excel	305
MS Office	462
MS Project	430
MS Word	294
Norton Utilities	94
PageMaker 4.2	485
Persuasion 2.1	312
QuarkXPress	544
Superpaint 3.0	127
Think C	186
Think Reference	63

Warranty: One Year Parts & Labor, Return Policy: 15 days Money Back Subject to 10% Restocking Fee, Shipping Charges Not Refundable.
Not Responsible For typographic Errors, Prices Subject To Change W/O Notice. Corporate Accounts Welcome. We Accept Purchase Orders.



2372 QUME DRIVE, SUITE F
SAN JOSE, CA 95131
TEL: (408) 954-0490 Fax: (408) 954-0496

CORPORATE PO'S WELCOME



Since the Personal Communicator isn't necessarily going to be running the same applications that are on the PC, how does this work?

It turns out that that's not what they want. What they tell us is the reason they want PC connectivity is because they want to get the data back and forth, which we do quite elegantly.

You can go to extremes—you can retrieve a file while waiting for a customer, on a wireless basis. You could connect to your company's PC and get the file. They like that, this shortening-the-information-cycle idea. That's what they're after. Few of the customers we've talked to have mentioned that what they want is to run the same application. They don't like those applications. They're trying to get their users to use the system, and to get that experience of something that's very direct, very simple.

I'm sure there are customers who want that, by the way. And we don't have a solution for them. That's not what we're offering. We don't do that. We have a solution for the people who say, "What I want is something very direct to use, very intuitive, that is centered around my communication activities." That's what we've got.

And that's why those people are delighted. Their field personnel are not using much of the PCs they have. They're equipped—you ask them, they have PCs, because they're so inexpensive these days. And if you ask them what they do with it—not much. Do they do many apps? No, they don't. Some of them know 1-2-3 or Excel or Borland's Quattro. They do a few forecasting things with a fixed template that was given to them by the company that they type into. And that's it.

They might use the email...

They might use the email, although you'd be amazed, it's not widely used by the field people. At the headquarters, a lot. In the field, those guys never got into how to use that stuff. Not much. But the headquarters people do.

The MIS guys said yeah, it would be great if they used it—and they think that what we have will make them use it, because they can send a handwritten note. They have flexibility in how they do things.

So it's not a big requirement. It doesn't come up. It's not what they're after.

Now if they really want the data to go back to the corporate computer—they want their sales guy to be able to get an updated history of fifty customers in the morning from the corporate database—that level of connectivity is key. And we have it—we can improve it, but we actually have a pretty good setup where you can access a PC remotely from anywhere you are and see it as if it was local, and get files back and forth. And that's a very good start.

The only complaint I've gotten there is that we don't have that for a Mac. And as you'd expect, the people who like Macs—and I'm one of them—are quite adamant about wanting to use that.

Well, Mac people tend to be early adopters anyway, so when anything neat comes along Mac people tend to be at the front of the line going "Where's mine?"

Absolutely. And we're looking at that. It's a reality of the development cycle that we weren't

able to provide this specific feature at first customer shipment.

And you're still expecting to start volume shipment in the second quarter?

Yep, we're right on track.

Clearly you've made some technology decisions along the line—for example, you could have gone with Intel or SPARC, but you went with AT&T's Hobbit chip. By the same token, you could have gone with Pen Windows instead of GO's PenPoint—and then, in theory at least, people could have run their spreadsheets and so forth. What was your thinking in making the technology decisions you did?



Clearly the Communicator could be your perfect window on the information world, the content world. We're looking at both online and store-and-forward services, where you can get delivery of customized news bulletins. We think that we have the great delivery mechanism for them. The machine has this paper metaphor—how much better can it get?"

On the chip side, we knew already that to do communications in a seamless way, to send things in the background while you work, you would need a lot of processing power. Processing power is ease of use, actually. And you didn't get enough. And object-oriented operating systems, which we knew was where the future was, are actually high consumers of CPU cycles.

This is a typical thing—as you move to more sophisticated technologies, you need an order of magnitude more processing. We learned that with the Mac. When we got the 128K Mac we thought it was great. We forgot that it was great for a character-based machine.

So we knew it would take a lot more processing power, and we looked around for technology, and RISC was the way, because it gives you this unique combination of a lot of processing power, and an intrinsically small silicon die, meaning that low cost can be achieved. And because they have few transistors, low power consumption can be achieved.

Which for portables is crucial.

Or you die!

So you look at that and say, "for \$20-\$30, I'm going to get today the power of a 486, tomorrow the power of a 586, at very low power." You've got to do that, that's the way you're going to win.

It's a risk. It's a big risk. But that's the decision you make trying to go and jump on the next curve. Otherwise you're stuck on the Intel curve with everybody else.

Then the OS decision—that is always a tricky one, and we looked carefully. Now, they're linked, as you probably appreciate—once you've decided "Yeah, I really want to go with RISC technology," you've got to go with an OS that's going to work on a RISC processor. We talked to Microsoft...

Sun's Solaris is a little big for what you're trying to do...

Solaris is great, but a bit heavy for what we're trying to do, and certainly the user interface aspect and everything were less than pleasing from the perspective of a small personal system.

Windows NT sounds great, and would work on the MIPS chips, and on the DEC Alpha. But there's two kinds of RISC processors, really—you have the traditional RISC, which is this desktop idea of "go

as fast as you can. Who cares how much power, who cares how much money." And lots of transistors to make it go even faster—they are really powerful. And there is this new idea of RISC as the engine for a portable device, and there aren't many of those. Hobbit was one of the few.

And so you decide that, and you see that Microsoft won't do anything for Hobbit, and it's hard to convince them, they're very busy...they're doing MIPS and doing DEC and other things. The DEC chip technically is incredible, but that doesn't do what we want.

GO was a unique opportunity, a combination of pretty much the right philosophy for us—communications-oriented, scalable. We're thinking about very small devices, and some pretty big—you can't see and read a fax on a pocket device, and that's not going to change ever. There's limits to scalability, so there is a market for larger devices, no matter what. We have customers who won't take small devices, that's not what they want to do.

They already had that philosophy of how you make things very direct. And we had a chance to convince them to make it move to Hobbit. [laughs]

And so when you look at what we were trying to achieve, that was a totally unique opportunity for us, because we could work with them very closely, and it's hard to work with Microsoft very closely, that's clear. They're too entrenched and powerful in where they are.

You could really make it happen on the right processor, and you could get the right features—com-



DOMINO COMPUTER SPECIAL

Shareware
Available
In Our
Stores

WE OFFER ONLY THE BEST
SERVICE • COMPATABILITY • RELIABILITY • AFFORDABILITY
DOMINO HAS 25 SERVICE CENTERS NEAR YOU

**CELLULAR
PHONES**
Motorola
PT-550
\$389

SPEAR® All-In-One VGA Systems

SPEAR 386SX/25/2MB

\$1088

SPEAR 486SX/25/4MB

\$1278

SPEAR 486/33/128k/4MB

\$1578

SPEAR 486DX2/66/256k/8MB

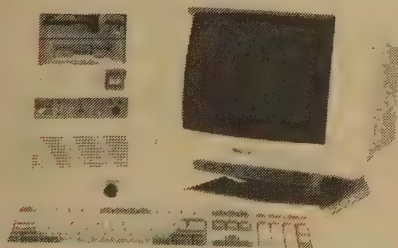
VESA LOCAL BUS

\$2318

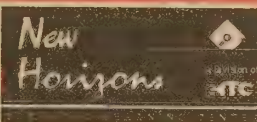
Systems come with following features:

- 1.2MB floppy and 1.44MB floppy
- 80MB hard disk
- 2 serial, 1 parallel, 1 game
- 1280 x 1024 WINSTAR SVGA card 1MB
- Super VGA monitor (.28 pitch)
- DOS 5.0, 3-button mouse & mouse pad
- Hard disk loaded with spreadsheet, word processing, DOS tutor, and many more
- Memory upgrade: per MB \$35
- Hard disk upgrade: 130MB \$85
200MB \$210
- CD-ROM (6 titles) special upgrade: \$290
- Laser printer Add \$605
- OKI 24 pin printer Add \$215

**PC SOURCES May 91 Product
Review on SPEAR 386/33:**
*"An aggressively priced product
that provides top performance."*



**FREE
COMPUTER
CLASS from**



with any system purchase
Also with any system purchased, a
CD-ROM w/6 titles Only \$250
Save \$100

LOSS LEADER of the MONTH SPEAR 386/33MHz/4MB

- 1.2MB Floppy Drive • 40MB HD
- 2 serial, 1 parallel, 1 game port
- 101 key Keyboard
- VGA card and monitor

\$878

TYPEREADER OCR SOFTWARE

with flatbed scanner \$799
Turn Documents Into Editable Files
Eliminate Costly Retyping
OCR Your Document in Our Store for \$2 a page

HOT PRODUCT!! BitFax/OCR

Turn Fax into Editable Text **\$69**

14.4/14.4 Fax/Data Modem \$240

DOMINO CLEARANCE CENTER

Located in our Fremont Store

- VGA Card \$25
- DOS 4.01 (Upgradable to 5.0) \$10
- New Baby AT Case \$15
- Demo Monitor (Mono/EGA) \$20/80
- Used 286 & 386 Computers CALL

NEW!

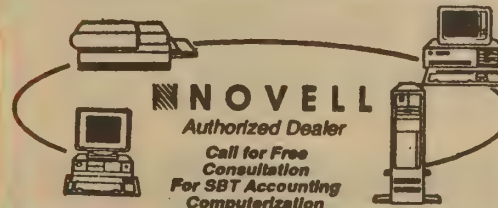
SOUND MACHINE

SoundBlaster Clone with Speakers
& Joystick \$105

NOTEBOOK SPECIAL

Brother HJ-100i Notebook
Printer \$295
486/33/80MB
Notebook \$2150

Specialized in Novell and UNIX Networks



NOVELL
Authorized Dealer
Call for Free
Consultation
For SBT Accounting
Computerization

**100 % financing
available for your
home computers
and leasing for
your business**

OAKLAND
1238 Harrison
Oakland, CA 94612
(Harrison & 12th)
510/839-1800
Corporate Sales Div., Ext. 123
Macintosh Sales Div., Ext. 125
Network Sales Div., Ext. 128

FREMONT
46573 Mission Blvd.
Fremont, CA 94539
(Cnr Mission & Warm Springs)
510/623-7181
Corporate Sales Div., 623-7897
Network Sales Div., 623-7892

PLEASANTON
6700 Santa Rita, Ste. D
Pleasanton, CA 94588
(Pleasant Village
Shopping Ctr. at 580)
510/847-1771

Domino
COMPUTER, INC.

Prices subject to change without notice. Not responsible for typographical errors.

BERLIN TECHNOLOGY, Inc.

1478-A Fruitdale Ave. * San Jose * CA 95128
Tel. (408) 297 - 7138 * Fax. (408) 297 - 7302

One Year Warranty
Part & Labor on
Systems

386 DX/486 Intel CPU BASIC SYSTEMS INCLUDE:

- * OPTI write back cache
64K exp up to 256K
cache
exp to 32M on board
Zero wait state
- * New AMI BIOS
- * 101 IDE 2HD/2FD
Controller
- * 101 KB, Teac 1.2 MB
or 1.44 MB FDD
- * Enhanced Case
or Mini Tower case
- * 2 Serial/ 1Parallel/
1Game
- * Motherboard w/CPU
and
1MB basic memory
installed
- * 8 EXPANSION SLOTS
- * MATH
COPROCESSOR
SOCKET
- * CLOCK/CALENDAR
w/BATTERY BACKUP

OPTION A

1.2 & 1.4 Teac + 4 Meg
SVGA Interface Monitor
(1024x768) Esp or Impression
.28 dot pitch 512K Paradise
Mouse (Microsoft Compat)

OPTION B

1.2 & 1.4 Teac + 4 Meg
NSVGA Noninter Monitor or
Impression (1024x768).28 dot pitch
1 Meg Trident 256 colors
Mouse (Microsoft compat)

OPTION C

1.2 & 1.4 Teac + 4 Meg
NSVGA Noninterlace
Viewsonic 6-.28 dot pitch
1 Meg svga ET4000
Mouse (Microsoft Compat)

OPTION D

1.2 & 1.4 Teac + 4 Meg
SVGA NonInterlace
Sony 1304s (1024x768)
.25 dot pitch 1M Orchids prlls
Mouse (Microsoft Compat)

SYSTEM

BASIC OPTION

80Meg

120Meg

200Meg

386-33/40
64K Cache
exp 32 Meg
on Board

\$340

no OP.

\$550

\$580

\$720

OP. A

\$955

\$1010

\$1125

OP. B

\$1010

\$1065

\$1195

OP. C

\$1095

\$1160

\$1300

OP. D

\$1345

\$1425

\$1565

486-33
64K Cache
exp 32 Meg
on Board

\$580

no OP.

\$780

\$825

\$940

OP. A

\$1200

\$1252

\$1390

OP. B

\$1265

\$1325

\$1465

OP. C

\$1345

\$1400

\$1545

OP. D

\$1600

\$1655

\$1820

486-50/64K Cache
exp 32 Meg
on Board

\$750

no OP.

\$940

\$990

\$1090

OP. A

\$1340

\$1390

\$1490

OP. B

\$1410

\$1450

\$1565

OP. C

\$1500

\$1560

\$1660

OP. D

\$1745

\$1810

\$1920

ADD \$100 TO
UPGRADE
486-66 mhz

**MAXTOR 80 MB
\$200**

**MAXTOR 120 MB
\$250**

**MAXTOR 210 MB
\$350**

**MAXTOR 340 MB
\$580**

**VIDEO BLASTER
\$340**

**TAPE BACKUP
120 MB \$185**

**WINDOWS WORK
GROUPS \$69**

**SONY 1304S
\$550**

**CONNER 40MB
\$135**

**IX9-70NS
\$31**

**IX3-70 NS
\$30**

**4X9-7NS
\$125**

**TAPE BACKUP
250 MB \$240**

**VIEWSONIC 6
NON SVGA \$340**

**SONY CPD-1604S
CALL**

**3.5 1.44MB FD
\$49**

**CD-ROM SONY
\$279**

BERLIN TECHNOLOGY

386 And 486
Fully
Compatible with
WINDOWS 3.0,
MS-DOS,
AUTOCAD, OS/2
Novell, Banyan,
UNIX, SCO and
Other Software.

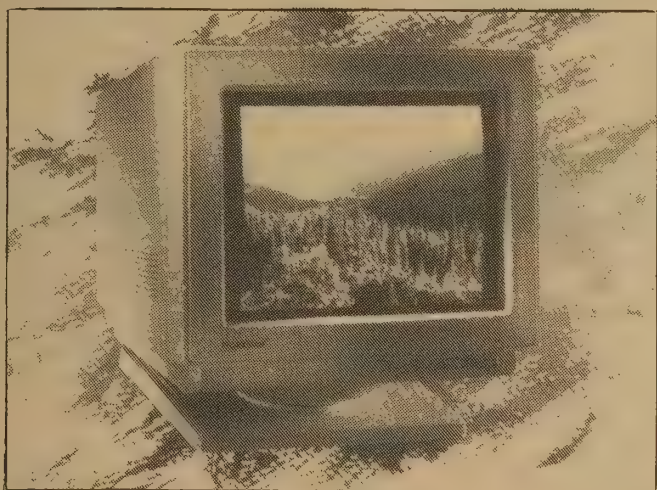
- * Price &
Availability
Subject To Chance
w/O Notice
- * We Accept VISA
& Mastercard
- * Not Responsible
for Typos
- * Government PO'S
Welcome
- * Company Terms
On Credit Approval

GoldStar VGA MONITORS

**PLEASE CALL FOR PRICES & SPECS
QUANTITY DISCOUNTS AVAILABLE**

**GOLDSTAR MONITORS ARE
NOW BACK IN STOCK IN
LARGE QUANTITIES!!**

CALL FOR DEALER PRICES.

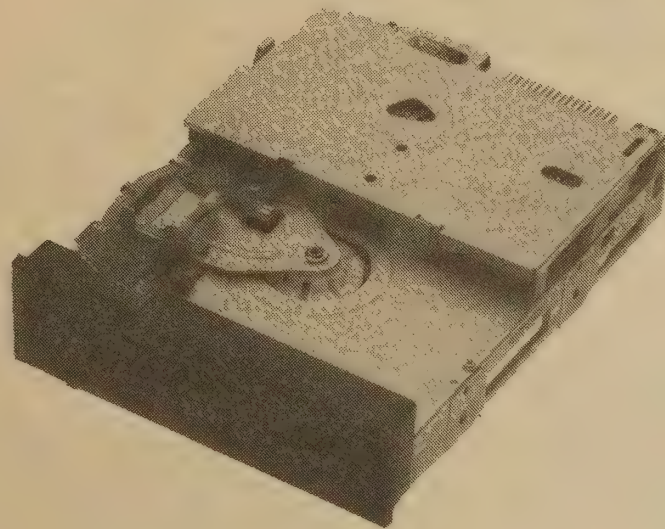


MODELS:

1460 Plus	1024x768	14" VGA .28
3028	1024x768	14" SVGA .28

CHINON FLOPPY DRIVES

**"THE QUALITY
AND PRICES
BEAT TEAC!"**



★★BEST PRICE ANYWHERE★★

**WE HAVE MOVED TO NEW OFFICES:
48879 KATO RD. (OFF MILMOUNT)
FREMONT, CA 94539 (510) 657-8079**

WESTERN DIGITAL HARD DISKS

WE CARRY A FULL LINE OF W.D. IDE HARD DISKS

120 MB, 170 MB

200 MB, 240 MB

WHOLESALE ONLY!

DEALERS CALL FOR PRICING!



MICRO DISTRIBUTION CENTER

48879 KATO RD., FREMONT, CA 94539 (510) 657-8079 FAX (510) 657-9511
15523 BROADWAY, CENTER STREET, GARDENIA, CA 90248 (310) 515-0155

AT, XT is a registered
trademark of IBM Inc.

MICRO MARKETPLACE

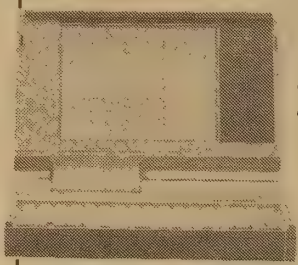
VESA 2 LOCAL BUS 486-66DX2 128K CACHE SYSTEM \$958 Motherboard Only *778	VESA 2 LOCAL BUS 486-50DX 128K CACHE SYSTEM \$858 Motherboard Only *668	VESA 2 LOCAL BUS 486-50DX2 128K CACHE SYSTEM \$808 Motherboard Only *618	VESA 2 LOCAL BUS 486-33 128K CACHE SYSTEM \$678 Motherboard Only *498	EISA 486-66DX2 256K CACHE SYSTEM \$1088	EISA 486-50DX 256K CACHE SYSTEM \$1038	EISA 486-50DX2 256K CACHE SYSTEM \$958	EISA 486-33 256K CACHE SYSTEM \$828
486-66DX2 128K CACHE SYSTEM \$898 Motherboard Only *728	486-50DX 128K CACHE SYSTEM \$808 Motherboard Only *628	486-50DX2 128K CACHE SYSTEM \$758 Motherboard Only *578	486-33 128K CACHE SYSTEM \$628 Motherboard Only *448	486-25SX 128K CACHE SYSTEM \$458 Motherboard Only *265	386-40 SYSTEM \$368 Motherboard Only *175	386-33 SYSTEM \$363 Motherboard Only *170	386-25SX SYSTEM \$298 Motherboard Only *105

BASIC SYSTEM CONFIGURATION:

- 1 MB RAM Expandable
- IDE 2FD/2HD Controller
- 101 Key Mitsumi Keyboard
- Teac 1.2 or 1.44 MB Floppy Drive
- 2 Serial, 1 Parallel, 1 Game Ports
- Mini-Desk Top or Tower Case
- Power Supply
- One Year Warranty

LIFETIME LABOR WARRANTY ON SYSTEM

386-25SX & 486-SLC-25 NOTEBOOK



- 2 MB RAM
- 1.44 MB 3.5" FDD
- 81 Key Keyboard
- MS DOS 5.0
- 2.5 Hour Ni-Cad Rechargeable Battery
- External Keyboard/VGA Ports

OPTIONS:

- 24/96 Fax/Modem *125
- 2 MB Upgrade *125
- 4 MB Upgrade *245

H.D.	386-25SX	486-SLC 25
60 MB	*1135	N/A
80 MB	*1195	*1485
120 MB	*1325	*1615
200 MB	*1575	*1925

VIDEO CARDS

ATI Ultra Pro VLB 2MB	*459
ATI Ultra Pro 2MB	*449
ATI Ultra Graphics w/Mouse	*268
ATI Ultra Graphics Plus 2MB	*329

DIAMOND SPEEDSTAR-24X WINDOWS ACCELERATOR	
1280x1024 1 MB 16 Million Colors	*162
DIAMOND Stealth 24 VLB (S3 Chip)	*165

ORCHID FAHRENHEIT DRAM	*155
ORCHID FAHRENHEIT VESA LOCAL BUS	
BUS	*175
GENOA VESA LOCAL BUS	*155
ET 4000 OEM VGA	*85
ET 4000 LOCAL BUS	*139

TRIDENT VGA (1024x768) 1 MB	*60
Accumos VGA 800x600/256K	*28
Accumos 1024x768/512K	*39
GENERIC Monochrome Graphics w/Printer Port	*17
Paradise Chip Windows Accelerator	*115

DRIVE CONTROLLERS

Hard disk controller XT	*48
MFM Contrl (1:1 Inter)	*55
DTC 3280 SCSI	*95
DTC 2290 EISA IDE FD/HD	*145
IDE Controller	*20
IDE Controller/4 Floppy	*35
IDE Controller w/2S/1P/1G	*25
IDE I/O VLB	*75
Adaptec SCSI 1542 B/w/Software	249/259
Adaptec SCSI 1742A EISA w/Floppy	*425
Adaptec SCSI 1742A EISA w/Floppy & Software	*458
Adaptec SCSI 1542 Plus w/tape Back-up & CD ROM Drivers	*329
Ultrastor VLB SCSI II 32K Cache	*325

I/O CARDS

AT I/O (2S 16550/1P/1G)	*42
RS-232 card	*17
AT-I/O (2S/1P/1G)	*20
Printer Card	*14
Game Card	*14

MONITORS

NANAO F550i 17"	*1125
T560i 17"	*1735
T660i 20"	*2595
KFC 17" Flat Screen .26	*905
STANDARD 17" .31	*650
VIEW SONIC V8	*1595
V7 17" Flat Screen (72Hz Non-Int)	*1025
V6 Non-Int 14"	*355
V6FS 15"	*575
V4E 1024x768 VGA 14"	*315
EYEQ 1024x768 VGA .28/NI	*275/315
SVGA 1024x768 .39	*225
STANDARD TECHNOLOGIES	
1024x768 .28 w/Oversizing	*275
VGA Mono	*109
NEC 4FG	*748
3FGX	*648
14" Flat Screen Mono (Amber or Paper White)	*95
12" Amber Mono	*75
SONY 1304 Non-Int (1024x768) 14"	*565
1604S 16"	*995
1936 20"	*2095

KEYBOARDS

MaxiSwitch Keyboard 124 Keys	*79
Keytronic 101	*45
Mitsumi 101	*33
Chicony 5161 101 Keyboard (clicking)	*39
MAXISWITCH 101 Keyboard	*39
Omni 102/Ultra	*69/95
Black 101 Keyboard	*39

MODEMS & FAX MODEMS

ZOLTRIX 2400 Internal Modem	*38
ZOLTRIX 24/96 Pocket Fax/Modem	*139
14400 Fax Modem V.42 Int/Ext	*215/240
24/96 Fax Modem (Send/Receive)	*58
144/96 Fax Modem (Send/Receive)	*279

DISK DRIVES

TEAC 1.2 MB	*57
3.5" (1.44 MB)	*55
1.2, 1.44 MB Combo Drive	*139
MAXTOR	
130 MB 15ms (64K Cache)	*249
7245A 240 MB	*379
7213A 213 MB	*349
LXT 340S (SCSI II)	*599
SCSI/ESDI 8760-E 650 MB	*1139
LXT-340A	*599
LXT-535A 535 MB	*899
1.2 Gigabyte 13ms	*1359
1.7 Gigabyte 13ms	*1629
CONNER 40 MB	*139
80 MB	*199
120 MB 19ms	*249
170 MB 17ms	*269
213 MB 12ms	*349
250 MB	*379
540 MB	*938
TOSHIBA	
877 MB SCSI II 3.5"	*1099
1.2 GB SCSI II 3.5"	*1498

TAPE BACK-UP

COLORADO Tape Back-Up 120 MB	*189
Tape Back-Up 250 MB	*255
DC-2120 Tape Cartridge For Above	*20
COLORADO Drive External Kit	*109
COLORADO Trakker 250 MB	*CALL

NETWORK CARDS

Ethernet 8 Bit	*85
Ethernet 16 Bit	*95
Arnet Star/Bus 8 Bit	*49
10 BT Ethernet 16/8 Bit	*105/95

HIGH QUALITY MAIN BOARDS

486-66 MHz w/CPU w/128/256K Cache	*768/808
486-50 MHz w/CPU w/256K	*698
486-50 MHz DX2 128K Cache	*615
486-33 MHz w/CPU w/128K Cache	*485
486-25SX w/CPU w/Cache	*295
386-40 (64K Cache) w/CPU	*175
386-33C (64K Cache) w/CPU	*170
386-33SX	*115
386-25SX	*105

COMPUTER CASE

14" Baby AT Case w/200W P/S	*79
17" Baby AT Case w/200W P/S	*89
Vertical Case 250 W P/S	*139
Medium Vertical Case 250 W P/S	*115
Mini Vertical Case 200 W P/S	*79
Sleek Black Case	*CALL

LOGITECH PRODUCTS

Logitech Trackman Combo	*79
Logitech Trackman Portable	*95
Logitech Model 256 Scanman	*249
Logitech Bus Mouseman	*64
Logitech Mouseman Combo	*64
First Mouse	*37
Mouse (Serial 9 Pin)	*15
Microsoft Mouse Bus/Ser (400dpi)	85/ 75
Trackball	*28

PRINTERS

Panasonic KXP-1624 132 Column	*355
KXP-1180	*158
KXP-1123	*209
KXP-1124i	*295

MISC.

Windows 3.1	*45
MS DOS 5.0	*45
6/10/15/25' printer cable	3.50/6/10/20
Keyboard Extension cable	*5
Monitor Extension cable	*5
Keyboard Drawer/Under Table	*27/18
Computer floor stand	*7**
Power Center	*18
Printer switch box (AB/ABCD)	*9**/19
Power supply 150/220W	*38/48
Memory Chips (DIPS/SIPPS/SIMMS)	*CALL
Math Co-Processors	*CALL
Disk Box	*7.50
Power Strip	*7

U.P.S.

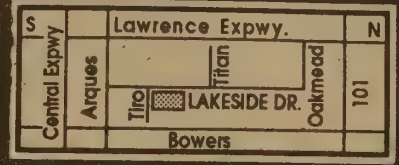
550 VA	*229
--------	------

Always Ready to Offer More Assistance



Always Ready to Offer More Assistance

470 LAKESIDE DR. Suite F
SUNNYVALE, CA 94086
Tel. (408) 736-4355 M-F 9-7
FAX (408) 736-4356 Sat 10-4
Prices Subject To Change w/o Notice
Prices Good At Sunnyvale Store Only
*20 surcharge for PO processing on systems



MODESTO OFFICE
3430 Tully Rd., Suite #21
Modesto, CA 95350
Tel. (209) 525-8080
FAX: (209) 525-8120

YOUR ONE STOP MULTIMEDIA SOURCE

MICRO MARKET PLACE

CREATIVE

CREATIVE LABS, INC.

MULTIMEDIA PRODUCTS

- **VIDEO BLASTER** \$345
 - DISPLAY FULL-MOTION VIDEO IN A WINDOW.
 - OVERLAY COMPUTER TEXT AND GRAPHICS ON VIDEO.
 - FREEZE, STORE AND MANIPULATE IMAGES FROM VCR'S OR ANY VIDEO SOURCE.
 - APPLICATION SOFTWARE BUNDLED
- **SOUND BLASTER** 88
 - MIDI INPUT, GAME PORT, AD LIB COMPATIBLE
- **SOUND BLASTER PRO BASIC** 155
 - STEREO SOUND CARD
- **SOUND BLASTER PRO** 188
 - SOUND BLASTER PRO, MIDI BOX
- **SOUND BLASTER PRO 16** 265
- **MULTIMEDIA STARTER KIT** 438
 - SOUND BLASTER PRO CARD, CD-ROM, MPC SOFTWARE, MICROSOFT® BOOKSHELF®
- **MULTIMEDIA UPGRADE KIT** 525
 - SOUND BLASTER PRO CARD, CD-ROM, MPC SOFTWARE, MIDI KIT, 6 CD TITLES
- **CADDY** 8
- **SPEAKERS** 22
 - LABTEC CS-150
 - BUILT-IN POWER BOOSTER
 - "C" SIZE BATTERY NOT INCLUDED

CD-ROM

- **PANASONIC 522 (AT BUS W/CONTROLLER CARD)**
380MS ACCESS TIME, 150KB TRANSFER RATE
INTERNAL DRIVE \$248
EXTERNAL DRIVE 308
- **PANASONIC 501 (SCSI W/CONTROLLER CARD)**
380MS ACCESS TIME, 150KB TRANSFER RATE
INTERNAL DRIVE \$308
EXTERNAL DRIVE 368
- **SOFTWARE DRIVER FOR MACINTOSH** 60



- **"MEDIA VISION" MUSIC CARD** \$168
• PRO AUDIO SPECTRUM 16 (OEM VERSION)

"AROMA" MULTIMEDIA KIT

YOU DON'T HAVE TO PAY FOR CD'S
YOU DON'T WANT!

- **CD-ROM PANASONIC 522 (AT BUS)** \$398
PLUS SPECTRUM 16 CARD
• CADDY, CABLES INCLUDED
INTERNAL DRIVE \$398
EXTERNAL DRIVE 458
- **CD-ROM PANASONIC 501 (SCSI)** \$458
PLUS SPECTRUM 16 CARD
• CADDY, CABLES INCLUDED
INTERNAL DRIVE \$458
EXTERNAL DRIVE 518

CD-ROM SOFTWARE TITLES

WITH DRIVE PURCHASE PRICES

CD-ROM SOFTWARE TITLES

BUNDLE SPECIALS:

(WITH AROMA'S MULTIMEDIA PRODUCT PURCHASE ONLY)

BUSINESS CD-ROM TITLES

- AMERICAN BUS. PHONE BOOK \$18
- BUSINESS & ECONOMIC ATLAS 27
- MARKETING MASTER DOS 18
- PUBLISH*IT 2.0 DOS 33

ENTERTAINMENT CD-ROM TITLES

- CHESSMASTER 3000 MPC \$27
- JONES IN THE FAST LANE MPC 25
- KINGS QUEST V MPC 25
- LOOM FROM LUCAS FILM 29
- MAVIS BEACON TEACHES TYPING 27
- MEDIA CLIPS 4 PACK FROM ARIS. 49
- PC SIG LIBRARY 10TH EDITION 29
- SECRET WEAPONS OF LUFTWAFFE ... 33
- SHERLOCK HOLMES, CONS, DET 25
- SO MUCH SHAREWARE 19
- TOTAL BASEBALL 35
- WHERE IN THE WORLD IS
CARMEN SAN DIEGO 27
- WING COMMANDER
& SECRET MIS 1&2 32
- CD STORYTIME DOS 19
- STELLAR 7 DOS 23
- MONKEY ISLAND 25
- AMANDA STORIES 42
- COMPOSER QUEST MPC 42
- BEAUTY & BEAST 19
- PETER & WOLF 19
- MIXED-UP MOTHER GOOSE 25
- WINWARE VOLS 1 & 2 23

EDUCATIONAL CD-ROM TITLES

- ANIMALS V1.0 SOFTWARE TOOL. \$27
- FAMILY DOCTOR 27
- GUINNESS DISC OF RECORD '92. 27
- LIBRARY OF THE FUTURE 48
- TIME MAGAZINE ALMANAC 1991. 25
- U.S. ATLAS WITH AUTOMAP 35
- U.S. HISTORY 35
- WORLD ATLAS MULTIMEDIA MPC 35
- FAMILY CHOICE 27
- LIBRARY OF THE FUTURE 1ST 48
- NAT'L GEOGRAPHIC MAMMALS ... 27
- WORLD VIEW 29
- AUDUBON MAMMALS 58
- OCEAN DIGITAL IMAGERY VI 30
- ELEC LIBRARY OF AST VI 29
- GREAT CITIES VOL I 23
- GREAT CITIES VOL 2 23
- TIME TABLE OF HISTORY 24
- TOOLWORKS ENCYCLOPEDIA 64
- WILD PLACES 32

SHAREWARE

- PC-SIG 9TH ED DOS \$18
- PC-SIG 10TH ED DOS 28
- SO MUCH SHAREWARE I 15
- SO MUCH SHAREWARE II 19

*CALL FOR MORE INFORMATION ON SOFTWARE TITLE AVAILABILITY & PRICING

486-33 MHZ MULTIMEDIA COMPLETE SYSTEM SVGA W/CD-ROM

PACKAGE INCLUDES:

- 486-33 MHZ W/128K CACHE
- INTEL 80486-33 CPU
- 4 MB RAM
- 120 MB HARD DRIVE
- PANASONIC CD-ROM MODEL 522
- MEDIA VISION MUSIC CARD SPECTRUM 16
- 1.2 OR 1.44 MB FLOPPY DRIVE
- 14" SVGA 1024x768 .28MM COLOR MONITOR
- SVGA CARD W/1 MB
- IDE CONTROLLER (25/1 F/1 G)
- 101 KEYBOARD
- LABTEC CS-150 SPEAKERS

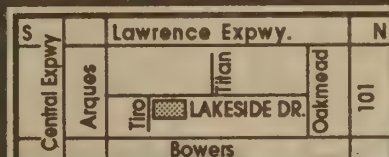
\$1728

CALL FOR OTHER CONFIGURATIONS & OPTIONS



Always Ready to Offer More Assistance

470 LAKESIDE DR. Suite F
SUNNYVALE, CA 94086
Tel: (408) 736-4355 M-F 9-7
FAX: (408) 736-4356 Sat 10-4
20 surcharge for PO processing on systems
Prices Subject To Change w/o Notice
Prices Good At Sunnyvale Store Only



MODESTO OFFICE
3430 Tully Rd., Suite #21
Modesto, CA 95350
Tel: (209) 525-8080
FAX: (209) 525-8120

WHY BUY FROM ANYONE ELSE... WHEN YOU CAN BUY FROM THE BEST— UNIVERSAL COMPUTER PRODUCTS

**1 YEAR PARTS/
1 YEAR LABOR
WARRANTY
ON ALL
SYSTEMS**

486-33 MHz

W / 64 K C A C H E

- ▼ 4 Mb RAM installed
- ▼ 1.2 and 1.44 Mb Floppy Drive
- ▼ 1:1 Interleave 2 HD/FD Controller
- ▼ AT Multi I/O (25/1P/1G)
- ▼ Clock/Calendar with battery back-up
- ▼ Enhanced 101 Keyboard
- ▼ 120 Mb IDE Hard Drive
- ▼ SVGA Monitor w/Card (1024x768 .28Dp)
- ▼ MS-DOS 5.0

\$1570

386-33 MHz

W / 64 K C A C H E

- ▼ 4 Mb RAM
- ▼ 8 Slots and Socket for Intel 80387 DX
- ▼ 200W Approved Power Supply
- ▼ Real Time Clock with Battery backup
- ▼ 2 Serial, 1 Parallel, 1 Game Port
- ▼ 101 Enhanced Keyboard
- ▼ 1.2 and 1.44 Mb Floppy Drive
- ▼ 120 Mb IDE Hard Drive
- ▼ 1:1 Interleave 2 HD/FD Controller
- ▼ SVGA Monitor w/Card (1024x768 .28Dp)
- ▼ MS-DOS 5.0

\$1180

386 SX 16 MHz

- ▼ 0 Wait State on Motherboard
- ▼ Main Memory 2 Mb
- ▼ Expandable to 2 Mb/4 Mb/8 Mb
- ▼ Support CoProcessor Intel or Weitek
- ▼ AMI Bios set up
- ▼ 2 Serial, 1 Parallel, 1 Game Port
- ▼ 101 Enhanced Keyboard
- ▼ 1.2 and 1.44 Mb Floppy Drive
- ▼ 80 Mb IDE Hard Drive
- ▼ 1:1 Interleave 2 HD/FD Controller
- ▼ SVGA Monitor w/Card (1024x768)
- ▼ MS-DOS 5.0

\$900

REPAIR & UPGRADE SERVICES

ON IBM & IBM COMPATIBLES

- No appointment necessary
- Fast turn-around
- Courteous service
- Experienced technicians

ADD ON BOARDS

AT I/O Card 25/1P/1G	\$20
Mono Graphic/Printer	\$20
Color Graphic/Printer	\$35
XT High Density Floppy Cont	\$35
XT Hard Disk Cont	\$50
MFM 1:1 HD/FD Cont	\$79
IDE Dual HD/FD Cont	\$20
SCSI 1:1 HD/FD Cont	\$99
DTC 7287 RLL Cont	\$80
Orchid Pro Designer w/1 Mb	\$180
Paradise VGA Card	\$70
VGA Card w/256K	\$40
Oak VGA Card w/512K	\$58
Trident SVGA w/1 Mb	\$80
Everex Ram 3000 Expansion Card	\$90
Everex Ram 10K Expansion Card	\$150

CASES AND POWER SUPPLY

Baby AT w/200W Power	\$75
Baby Tower w/200W Power	\$75
Mid Tower w/220W Power	\$110
Full Tower w/250W Power	\$160
165W (XT) Power Supply	\$45
200W Power Supply	\$60
250W Power Supply	\$60

DRIVES

Frame for 3.5" Hard & Floppy Drive	\$5
CONNER	
CP-3000 40Mb IDE	\$185
CP-30084 80Mb IDE	\$220
CP-30064H 60Mb IDE	\$225
CP-30104 120Mb 19ms IDE	\$275
CP-30204 200Mb 16ms IDE	\$390
MAXTOR	
LXT-7080A 80Mb 19ms IDE	\$220
LXT-7120A 130Mb 15ms IDE	\$285
LXT213A 212Mb 16ms IDE	\$395
LXT340 340Mb 13ms IDE	*Call
SEAGATE	
ST-351A 40Mb 28ms IDE	\$170
ST-3120 100Mb IDE	*Call
ST-1239A 211Mb 15ms IDE	*Call
ST-251 40Mb 28ms MFM	\$249
TEAC	
360K 5.25"	\$60
720K 3.5"	\$60
1.2Mb 5.25"	\$60
1.44Mb 3.5"	\$60

INTEL MATH CO-PROCESSORS

80287-10 For 286 Systems	\$40
387 SX-16	\$115
387 DX-20	\$99
387 DX-25	\$99
387 DX-33	\$99

MEMORY CHIPS

DRAM	
1Mb x1-8	\$4.00
256K x8-10	\$1.25
256K x4-8	\$4.50
64K x10	\$1
SIMM	
4Mb x9-7	\$135
1Mb x9-7/8	\$40
1Mb x3-7/8	\$35
SIPP	
1Mb x9-8	\$40
256K x9-8	\$12

MODEMS

Everex 1200Baud Internal	\$48
Everex 2400Baud Internal	\$75
Everex 2400Baud Int. w/MNP5	\$150
Everex 2400Baud External	\$175
Everex 2400Baud Ext. w/MNP5	\$195
USRobotics 9600Baud Internal	\$290
USRobotics 9600Baud External	\$320
NUVO 24/96 Fax Modem	\$80

MONITORS

NEC 3FG	\$649
NEC 4FG	\$749
Sony 1304 SVGA	\$579
12"/14" Monochrome	\$80/105
SVGA Monitor 1024x768 28 dp	\$275
SVGA Monitor 1024x768 39 dp	\$249
Viewsonic 6	\$355
Viewsonic 7	*Call
14" Monochrome VGA	\$125
Relisys 14" SVGA Non-Int	\$310
ST 14" SVGA Non-Int (428-VESA)	\$330

MOTHERBOARDS

XT 10MHz Motherboard	\$70
286 12MHz Motherboard	\$85
386 SX 16MHz Motherboard	\$120
386 SX 25MHz Motherboard	\$130
386 DX 33MHz Motherboard	\$220
386 DX 40MHz Motherboard	\$230
486 DX 33MHz Motherboard	\$495
486 DX 50MHz Motherboard	*Call

PRINTERS

Citizen 200GX (9 Pin)	\$169
Citizen GSX140+ (24 Pin)	\$299
Citizen GSX230 (24 Pin)	\$255
Citizen GSX145 (132 Column)	*Call
Citizen Color Upgrade Kit	\$49
Okidata 321 (132 Column)	\$460
Panasonic 1180i (9 Pin)	\$159
Panasonic 1123 (24 Pin)	\$199
Panasonic 4410 Laser	\$629
Panasonic 4450 Laser	*Call
Toner KX-P450	\$37
Toner KX-P451	\$39 ⁹⁵
Toner KX-P453	\$35 ⁹⁵
HP 51604A	\$11 ⁹⁵
HP 51608A	\$19 ⁹⁵
HP 92261A	\$11 ⁹⁵
HP 92275A	\$69
HP 92295A	\$83

TAPE BACKUP

Colorado 120Mb/250Mb	\$199/259
External Kit for Colorado Drive	\$110

TRACKMAN

Logitech Trackball	\$59
Logitech Serial Mouseman	\$70
Microsoft Bus Mouse	\$90
Microsoft Serial Mouse	\$85
DEXXA Mouse w/Windows 3.1	\$75
DEXXA Mouse	\$25
Summasketch II	\$299
Mouse Systems A3 Mouse for Mac	\$75
Mouse Systems A3 Trackball for Mac	\$75
Mouse Systems Page Brush/Color Scanner for Mac	\$600

UNIVERSAL COMPUTER PRODUCTS

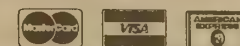
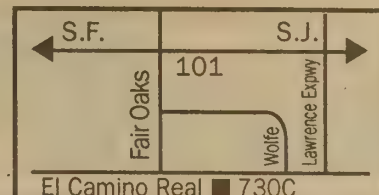
951 El Camino Real, South San Francisco, CA 94080

(415) 583-9736 Fax (415) 583-3457

Mon.-Fri.: 9am-6pm Sat: 10am-5pm

Prices subject to change w/o notice • Not responsible for misprints





i486DX-50/DX2-66 EISA VESA LOCAL BUS

- 80486DX50/DX2-66 MHz CPU
- 256K Cache Up to 512K
- 1 MB RAM Up to 256 MB
- 2S/1P/1G Ports
- 1.2 MB Floppy Drive
- 101 Keyboard
- Mini-Tower Case

\$1750/1850

i486DX-50/DX2-66 ISA VESA LOCAL BUS

- 80486DX50/DX2-66 MHz CPU
- 128K Cache Up to 256K
- 1 MB RAM Up to 64 MB
- 2S/1P/1G Ports
- 1.2 MB Floppy Drive
- 101 Keyboard
- Mini-Tower Case

\$899/999

i486DX-50/DX2-66 ISA BUS

- 80486DX50/DX2-66 MHz CPU
- 64K Cache Up to 256K
- 1 MB RAM Up to 64 MB
- 2S/1P/1G Ports
- 1.2 MB Floppy Drive
- 101 Keyboard
- Mini-Tower Case

\$850/950

ORCHID ISA VESA LOCAL BUS SUPER SYSTEM 486DX-50 MHZ

- ORCHID 486 VESA Super Board
- 80486DX-50 MHz CPU
- 256K Cache
- Orchid VESA IDE LB Controller
- Orchid VESA VA LB SVGA

\$CALL

UPGRADE YOUR 286 !!

- 80386SX-33 MHz
- 2 MB RAM
- Capable of Windows Applications

ONLY \$155

GRAPHICS DISPLAYS

IDEK MF5217, 1024x768 NI, 72 Hz, 0.28mm, 17"	\$899
IDEK MF8317, 1280x1024 NI, 72 Hz, 0.26mm, 17"	1099
IDEK MF5421, 1600x1200 NI, 72 Hz, 0.28mm, 21"	2380
MAG MX15F, 1280x1024 NI, 72 Hz, 0.28mm, 15"	579
MAG MX17F, 1280x1024 NI, 72 Hz, 0.28mm, 17"	1080
NANAO F550i, 1024x768 NI, 72 Hz, 0.28mm, 17"	1080
NANAO F560i, 1280x1024 NI, Trinitron, 0.26mm, 17"	1580
NANAO F750i, 1024x768 NI, 72 Hz, 0.31mm, 21mm, 21"	2050
HITACHI CM2085, 1280x1024 NI, 72 Hz, 0.31mm, 20"	1400

HITACHI CM2187, 1600x1280 NI, 72 Hz, 0.31mm, 21"	2195
SONY CPD1304S, 1024x768 NI, 60 Hz, 0.26mm, 14"	575
SONY CPD1430, 1024x768 NI, 60 Hz, 0.26mm, 14"	595
SONY CPD1604S, 1024x768 NI, 70 Hz, 0.26mm, 17"	1050
SONY GDM1936, 1280x1024 NI, 70Hz Trinitron 20"	2095
SEIKO 1450, 1024x768 NI, Trinitron, 14"	495
TOSHIBA P21CR00, 1280x1024 NI, 72 Hz MPRII, 0.31mm 21"	1995
NEC 3FG/4FG/5FG/6FG	CALL
VIEWSONIC 4E/5E/6E/7/8	CALL
SIGMA DESIGN DUAL PAGE MONO VGA Hi-Res	CALL

GRAPHICS ADAPTERS

ATI Graphics Ultra Accel SVGA 1280x1024, 1 MB	\$325	#9GXE S-3 928 Accel, 2 MB VRAM, 1 MB DRAM, Level 12	735
ATI Graphics Ultra + 1024x768 16K C, 1 MB	325	ORCHID Pro Designer IIs, 1 MB	CALL
ATI Graphics Ultra Pro Local Bus w/2 MB	495	ORCHID Fahrenheit 1280°, 1 MB VRAM	205
DIAMOND Speedstar 24, 1 MB	140	ORCHID Fahrenheit VA VESA LB, 1 MB	189
DIAMOND Speedstar 24X, 1 MB	175	AIR Star 2000 (Weitek 9000) 2 MB VRAM	550
DIAMOND Stealth 24 ISA S-3 801, 1 MB	190	HERCULES TI34010 Graphics Station	CALL
DIAMOND Stealth 24 VLB S-3 805, 1 MB	225	METHEUS VGA/1104+/Premier	CALL
DIAMOND Stealth Viper VLB (Weitek 9000) 1/2 MB	385/485	NATIONAL DESIGN Volante AT Series	CALL
#9GXE S-3 928 Accel, 1 MB VRAM, Level 10	399	#9GXI Level 23-29 Series	CALL
#9GXE S-3 928 Accel, 2 MB VRAM, Level 11	585	VERMONT MICROSYS X-Series/Cobra	CALL
		VIDEO SEVEN VEGA/VRAM/WIN. VGA	CALL

DIGITIZERS

**CALL FOR CALCOMP, KURTA,
SUMMAGRAPHICS & MICROGRID**

PLOTTERS

**CALL FOR HOUSTON INSTRUMENTS,
ENCAD & ROLAND**

MOTHERBOARDS

ISA	
486DX 66/50/33	CALL
386DX 40/33	\$110
386SX 33/25 CPU	110/105

VESA LOCAL BUS	
486DX 50/33	\$225
EISA VESA LOCAL BUS	
486DX 66/50/33	\$495

HARD & FLOPPY DRIVES

MAXTOR	
130MB IDE	\$270
200MB IDE	375
340MB IDE	625
130MB SCSI	325
200MB SCSI	425
340MB SCSI	675
676MB SCSI	1195
1.2GB SCSI	1555
1.7GB SCSI	1995

FUJITSU	
525MB SCSI	\$1095
1.2GB SCSI	1689

WESTERN DIGITAL	
340 MB IDE	\$595

SYDOS	
Puma 88 Ext	\$499

FLOPPY DRIVES	
1.2MB/1.44MB	\$56/55
Dual 1.2/1.44MB	149

PLUS DEVELOPMENT	
Hard Card 50MB	\$249
Hard Card 105MB	399

MONITOR

14" .39 (1024)	\$225
14" .28 1024/NI	270/325
12" Mono	75
14" Flat Screen Mono	95

OTHERS

Surge Protector	\$18
Mouse Pad	3

VIDEO CARDS

SVGA 512K (1024)	\$36
SVGA 1MB (1024)	56

TAPE BACK-UP

COLORADO	
DJ10 (120MB)	\$189
DJ20 (250MB)	255
AB-11	45
FC-10	95
TC-15 Controller	195
QFA 700MB	725
TC-02 (required)	259

CASES

Baby AT w/200W	\$79
Baby Tower w/200W	85
Mid Tower w/230W	105
Full Tower w/250W	138
Slim Case w/200W	95

KEYBOARD

NORTHGATE	
101 Omni	\$68
Ultra	94

FOCUS	
2001 101 Click	\$45
5001 130 Key w/ac	64

OTHERS	
Maxi 101	\$35
Keytronics 101	45
BTC101	29
Lite On 101	32

PRINTERS

PANASONIC	
1180i/1123	\$158/199
1124i/1624	285/349
2123/2124i	239/319
2180/2624	169/375
CITIZEN	
GSX 200/130	\$165/205
GSX 140/145	269/355
GSX 240	329

MOUSE

Microsoft Ser/Bus	\$89
Logitech Mouseman	64
Logitech First	35
Logitech Trackman	69
Microspeed Track Bus	99
Microspeed Serial	83
3-Button Mouse	14

NETWORK

ARTISOFT	
AE-2 Starter Kit/Win	\$485
AE-3 Starter Kit/Win	565
Articom	232
Central Station	379
AE-2 Ethernet Adapter	199
AE-3 Ethernet Adapter	235
AE-2/T 16 Bit 10BT	210
AE-1/T 8 Bit 10BT	135
2Mbps Adapter	145

3COM	
3C503/TP	\$195/215
3C507/TP	279/299
3C509/TP	139/139

SMC (Authorized Dealer)	
8 Bit Elite Plus	\$129
16 Bit Elite Plus	155
16 Bit TP Elite Plus	169
Full Line Of SMC	CALL

NOVELL (Authorized Dealer)	
NE1000	\$110
NE2000	165
NE2000TP	175
NE3200	670
Network 2.2	
5 User/10 User	479/1079
Network 2.11	
5 User/10 User	615/1299
20 User/50 User	1920/2799
100 User/250 User	3825/6825

CONTROLLER & I/O

ADAPTEC	
1522K	\$159
1542B	269
1640	330
1742 EISA SCSI	439
MYLEX	
DCE 376 EISA SCSI	\$599
ULTRASTORE	
15C IDE Cache	\$239
14F SCSI	239
24F SCSI EISA	450
OTHERS	
IDE w/25/P/G	\$18
25/P/G	15

MODEM

ZOLTRIX	
2400 Int w/MNP5	\$45
96/24 SR/Fax w/MNP5	70
9600/14400 Fax/Modem Int	279
9600/14400 Fax/Modem Ext	319
9600 Int/Ext w/Bitcom	229/239
INTEL	
Satisfaction 100 Int	\$105
Satisfaction 200 Int	299
Satisfaction 400 Int/Ext	435/499
ZOOM	
96/24 Fax Int/Ext	\$95/115
144/144 Fax Int/Ext	299/329

**ONE YEAR
WARRANTY**



AMT INTERNATIONAL

3074 LANDESS AVENUE, SAN JOSE, CA 95132
(408) 942-9695 FAX (408) 942-5509

**LOWEST PRICES
SAME DAY
SHIPPING**



486-50

- 256K Cache
- 80486DX-50 Intel CPU
- AMI BIOS
- 8 MB RAM (70ns)
- 1.2 MB Teac Floppy Drive
- 1.44 MB Teac Floppy Drive
- 200 MB IDE Hard Disk
- IDE Controller Card
- I/O (2S/1P/1G) Card
- Orchid Pro IIS w/1 MB Card
- 14" Non-Int SVGA Monitor
- 101 Key Keyboard
- Full Tower Case w/250W Power Supply

\$1949

**LOCAL BUS WITH S3
CALL**

486-33

- 64K Cache
- AMI BIOS
- 4 MB RAM
- 1.2 MB Teac Floppy Drive
- 1.44 MB Teac Floppy Drive
- 120 MB IDE Hard Disk Drive
- IDE Controller Card
- I/O (2S/1P/1G) Card
- SVGA Trident w/1 MB
- 14" SVGA .28dp Monitor
- 101 Keyboard
- Mid Tower Case
- 230W Power Supply
- w/Local Bus.....\$1519**

\$1369

386-40

- 64K Cache
- 80386DX-40 AMD CPU
- AMI BIOS
- 4 MB RAM
- 1.2 MB Teac Floppy Drive
- 1.44 MB Teac Floppy Drive
- 120 MB IDE Hard Disk Drive
- IDE Controller Card
- I/O (2S/1P/1G) Card
- SVGA Trident w/1 MB
- 14" SVGA .28dp Monitor
- 101 Keyboard
- Mini/Desktop Case
- 230W Power Supply

\$1069

386SX-25

- AMI BIOS
- 2 MB RAM
- 1.2 MB Teac Floppy Drive
- 1.44 MB Teac Floppy Drive
- 80 MB IDE Hard Disk Drive
- IDE Controller Card
- I/O (2S/1P/1G) Card
- SVGA Trident w/512K
- 14" VGA Monitor
- 101 Keyboard
- Mini/Desktop Case
- 230W Power Supply

\$810

MOTHERBOARDS OK With CPU

486-50 (EISA) 33/50 MHz	CALL
486-50 Local Bus w/256K Cache w/S3	1095
486-50 w/256K Cache	695
486-33 w/64K Cache	449
386-40 w/64K Cache	179
386-33 w/64K Cache	165
386SX-33	119
386SX-25	99
386SX-16	79
286-20/16	85/79

VIDEO CARDS

Artist XJS/XJ10	CALL
Diamond SpeedStar SVGA (32K, Hi-Color)	149
Diamond Stealth VRAM w/1 MB	225
Orchid 1280 Fahrenheit w/1 MB	235
Orchid ProDesigner IIs w/1 MB	125
Genoa Hi-Speed SVGA w/1 MB	149
Oak VGA w/512K	42
Oak VGA w/1 MB	55
Trident VGA w/512K	45
Trident VGA w/1 MB	59
Tseng Lab w/1 MB	89
OTHERS	CALL

MONITORS

Monochrome 12"/14"	\$75/99
Mono VGA 14"	119
14" SVGA 0.28	255
Non-Int SVGA 0.28	299
Sony 1304	589
ViewSonic 6/5E/6/7	CALL
NEC 3FG/4FG/5FG	CALL
Samsung 14" VGA (.31)	265
Samsung 14" SVGA (.28)	279
Samsung 15" SVGA (.28)	475
Samsung 17" SVGA (.31)	789
OTHERS	CALL

HARD DRIVES

CONNER 40 MB IDE	\$149
80 MB IDE	210
120 MB IDE	256
200 MB IDE	379
340 MB IDE	670
MAXTOR 80 MB IDE	225
130 MB IDE	245
213 MB IDE	369
360 MB IDE	595
340 MB SCSI	595
660 MB	CALL
QUANTUM 52 MB IDE	209
120 MB IDE	319
240 MB IDE	595
SEAGATE 40 MB IDE	165
105 MB IDE	235
130 MB IDE	289
200 MB IDE	539
CDC 91.5 MB SCSI	199
FUJITSU 540 MB IDE	950

FLOPPY DRIVES

1.2 MB Teac 5.25"	\$55
1.2 MB Samsung 5.25"	49
1.44 MB Teac 3.5"	49
1.44 MB Sony 3.5"	50

TAPE BACK-UPS

120 MB Colorado	\$189
250 MB Colorado	249
500 MB Portable	CALL

NETWORK CARDS

Ethernet 8-Bit	\$89
Ethernet 16-Bit	99
14 Port 10 BaseT Hub	539
Arcnet 8-Bit	49
Arcnet 16-Bit	59
Lantastic	65

**Prices Subject To Change w/o Notice
Not Responsible For Typographical Errors**

KEYBOARDS

NORTH GATE/OMNI	CALL
Keytronics 101	40
Maxiswitch 101	32
Chicony 101	30
Focus 5001 w/Calculator	65
Mitsumi 101 Key	30

MISCELLANEOUS

MS DOS 5.0	\$40
Windows 3.1	45
6' Printer Cable	4
10' Printer Cable	7
Power Supply 150/220W	39/49
Monitor/Keyboard Ext Cable 10'	7
Printer Switch (AB/ABCD)	10/20
Sound Blaster Pro	189
Sound Blaster	105
Sony CD-ROM	CALL

MICE

Logitech Serial	\$65
Logitech Scanman Model 32	149
Logitech Model 256 w/OCR	365
Microsoft Mouse	89
Logitech w/Windows 3.1	75
Windows 3.1 Upgrade	39

PRINTERS

HP LaserJet III	\$1469
Epson, Panasonic, Okidata, Citizen, & Others	CALL

ADD-ON CARDS

AT IDE I/O (2SPG, HD/FDC)	\$20
AT I/O (2SP, 1PP)	13
Bustek EISA SCSI	345
Apatec 1542B SCSI	245
Ultrastor ESDI	CALL
Fast SCSI w/1 MB	425
IDE w/Cache	195
IDE 4FD/2HD	32
IDE 2FD/2HD	14

COMPUTER CASES

Full Tower Case w/250W PS	\$95
Mid Tower Case w/230W PS	79
Mini Tower Case w/200W PS	60
Desk Top Case w/230W PS	99
Baby AT Case w/200W PS	60
Slim DeskTop Case w/200W PS	85

ONE YEAR
WARRANTY

VISA

AMT INTERNATIONAL

3074 LANDESS AVE., SAN JOSE, CA 95132

(408) 942-9695 FAX (408) 942-5509



LOWEST PRICES
SAME DAY
SHIPPING

QUANTITY PRICING FOR DEALERS & VARS, PLEASE CALL!

MEMORY BOARDS FROM ACCULOGIC

• **RAMpAT! 16 BIT**
Memory Up to 80286, 80386SX,
80386

\$90

• **RAMpAT PLUS**

Memory Up to 8 MB
For IBM PC, PC/XT, PC/AT, PS/2

\$125

• **SIMMply-RAM FOR PS/2 16 BIT**

Memory Up to 8 MB
For PS/2-50, 50Z,
60, 70, 80

\$159

• **SIMMply-RAM FOR PS/2 32 BIT**

Memory Up to 32 MB
For PS/2-70, 80, 90

\$169

2400 bps MODEM (INT)

9624 bps FAX/MODEM (INT)

9600 bps MODEM (INT)

9624 bps FAX/MODEM (EXT)

9624 bps POCKET MODEM

14.4 bps MODEM (INT)

14.4 bps FAX/MODEM (INT)

\$35

.59

239

.99

139

210

229

FAX/MODEMS

MEMORY UPGRADES

SIMM MODULES

16Mx9-70	\$605
16Mx4x36	515
1Mx36 70/80	139
4Mx9-80	125
4Mx9-70	129
4Mx9-60	137
1Mx9-10	27
1Mx9-80 (3 Chip)	32
1Mx9-70	34
1Mx9-60	35
256x9-70	10
256x9-10	8
256x9-80	9
256x9-60	14
1x9-10 (9 Chip)	27
1x9-80 (9 Chip)	36
1x9-70 (9 Chip)	37
1x9-60 (9 Chip)	38

APPLE-MAC

1Mx8-70	\$30
1Mx8-10	27
1Mx8-80	29
4x8-80/70	110

256x4-70 Video ZIP	\$10
256x4-70 ZIP	6
256x80 Static Column ZIP	6.50

DRAM

DRAM 256X4	256X4-80NS	4.00	
256X4-120NS	\$3.00	256X4-70NS	4.50
256X4-100NS	3.50	256X4-60NS	5.00
DRAM 1MGX1	1 MGX1-80NX	3.99	
1 MGX1-120NS	\$3.50	1 MGX1-70NX	3.99
1 MGX1-100NX	3.00	1 MGX1-60NX	4.99

256XI-STATIC COL			
51258P-10	\$1.00	1X4-80 DIPP	17
AAA 2800-08	1.59	1X4-80STT ZIPP	19
AAA 2800-07	1.75	1X4-70STT ZIPP	20
AAA 2800-60	1.85		

DRAM 64X4		DRAM 64X1	
41464-120	\$1.50	4164-15	1.00
41464-100	1.99	4164-12	1.25
41464-80	1.99	4164-10	1.50
DRAM 256X1			
256X1-150NS	\$1.25	256X1-80NS	1.50
256X1-120NS	1.50	256X1-70NS	1.95
256X1-100NS	1.25	256X1-60NS	1.75

CACHE MEMORY

2764-20/15	\$3.00
27256-15/20	3.75
D27C020-200	8.00
D27C040-150	15.00

EPROMS

32x8-20	\$6.00	8x8-20	4.00
32x8-15	8.00	8x8-15	4.99
64x4-20	8.50	8x8-25	4.00
64x4-15	14.00	16x4-20	3.99
64x1-20	5.99	16x4-15	4.50
64x1-15	CALL	128x8-20	37
		128x8-15	CALL

CPU CHIPS

80386DX-16	\$39
80386DX-20	45
80386DX-25	75
80386DX-33	89
80386-40	89
80486DX2-50	418
80386SX-25 AMD	40
80386SX-20 INTEL	35
80486DX-25	275
80486DX-33	329
80286-20	18
80286-10 (PLCC)	6
80286-12 (PLCC)	5.75
80286-16 (PLCC)	10
80486DX-50	475
80486SX-25	175
V-20-8	6
V-20-10	10
V-30-10	15

MATH CO-PROCESSOR

INTEL

8087-5 MHz	\$29
8087-2 8 MHz	59
8087-1 10 MHz	89
80287-6 6 MHz	30
80287-8 8 MHz	32
80287XL 8/10 MHz	59
80287XL 12 MHz (Laptop)	49
80287-10 10 MHz	49
80C287-12 12 MHz	39
80387SX-16	49
80387SX 20/25	79
80387DX-20	35
80387DX-25	59
80387DX-33	89

WEITEK

3167-20 20 MHz	\$25
3167-25 25 MHz	135
3167-33 33 MHz	240
4167-25 MHz	325
4167-33 MHz	595

CYRIX

82S87XL	\$59
83087-16	59
83087-25	75
83087-33	79
83067-40	85
83S87-16SX	65
83X87-20/25SX	67
83S870-33	79

IIT

2C87-8	\$40
2C87-10	39
2C87-12	49
2C87-20	49
3C87-20 DX	69
3C87-25 DX	79
3C87-33 DX	79
3C87-40 DX	89
3S87-16SX	55
3S87-20SX	59
3S87-25SX	68
3S87-33SX	70

ULSI

US 83C87DX-25	\$59
US 83C87DX-33	69
US 83C87DX-40	79
US 83C87SX-16/20	58
US 83C87SX-25	68
US 83C87SX-33	69

CHIPS & TECHNOLOGY

387DX-25	\$69
387DX-40 TUBE	59

CYRIX TYPE

83D87DX-33	\$65
83D87DX-40	72
80486 DLC-33	150

APPLE MACINTOSH
MEMORY

Mac SE; SE/30; II; IIfx; Ili; Ilii; Iliii	
1 MB Memory Kit	\$65
4 MB Memory Kit	160
Mac Ilii	
M0514-3LL-A 8 MB Kit	305
Mac Ilii; Ilii	
16 MB Memory Kit	825
(Ilii requires MAXIMA)	
Mac IIfx	
M0376LL-A 4 MB Kit	185
16 MB Kit (requires MAXIMA)	825
Mac Classic	
M3631LL-A 1 MB Exp Brd.	90
Mac Portable	
1 MB Card (True Static)	235
2 MB Card (True Static)	380
3 MB Card (True Static)	500
4 MB Card (True Static)	550
Powerbook 100: 140: 170	
2 MB Module	170
4 MB Module	295
6 MB Module	400

IBM PS/2 MEMORY

Mdl 30/386; Exp Brd 1497259	
30F5348 512K Kit	\$54
30F5360 2 MB Kit	95
Mdls 70-061; -121; 55SX; 65SX; Exp Brd	
6450605; 6450609; 34F3077; 34F3011	
6450603 1 MB Module	69
Mdls 70-061; -E61; -121; 50Z; 55LS; 65LS;	
55SX; 65SX; P70; Exp Brd 6450605;	
6450609; 34F30xx	
6450604 2 MB Module	100
Mdls 70-A21; -A61; -B21; -B61	
6450608 2 MB Module	99
Mdls 55SX; 65SX; 55LS; 65LS	
34F2933 4 MB Module	149
Mdl 80-041	
6450375 1 MB Card	75
Mdls 80-111; -121; -311; -321	
6450379 2 MB Card	99
Mdls 80-A21; -A31	
6451060 4 MB Card	225
Mdls 90; -95	
6450902 2 MB Module	160
6450128 4 MB Module	265
Mdls 50 & 60	
6450609 2-14 MB Exp Brd	280
Mdls 70 & 80	
6450605 2-8 MB Exp Brd	350
34F3011 4-16 MB Exp Brd	475
Adapter 6450367	
6450372 2 MB Module	285
PS/1 Home System	
1057035 512K Upgrade	75
92F99352 2 MB Upgrade	105
92F96944 MB Upgrade	175

LASER PRINTERS MEMORY

HP II & IID; CANON LBP-811 & LBP-811R;	
OLIVETTI PG 108 & PG 208	
1 MB Board	\$69
2 MB Board	99
4 MB Board	175
HP IIP; Ili; Ilii	
1 MB Board	69
2 MB Board	99
4 MB Board	175
IBM 4019 & 4019e	
1039136 1 MB Board	105
1039137 2 MB Board	140
1038675 3.5 MB Board	305
IBM 4029e	
1 MB	75
2 MB	99
4 MB	175
TI MicroLaser & MicroLaser PS	
1 MB Module	85
Panasonic KX-P4420; KX-P4450I	
1 MB Board	135
2 MB Board	160
4 MB Board	260
Epson EPL-6000; Toshiba PageLaser 6;	
Packard Bell PP9500; Facit P6060;	
Mannesmann Tally 905; AT&T 593 Laser;	
NCR 6435 Laser	
1 MB Board	155
2 MB Board	160
4 MB Board	260

NEC MEMORY

POWERMATE SX PLUS	
1-2 MB W/1 APC-H850E	\$175
4-8 MB W/4 APC-H52E	495
POWERMATE 386/25	
2 MB APC-H655X	320
8 MB APC-H656X	750
POWERMATE	
2 MB KIT OP-410-5201	140
4 MB KIT OP-410-5202	350
PROSPEED	
286, 386SX 16 MB PC21-21, 1 MB	190
386SX16 PC21-22, 4 MB	350
386SX 20 1 MB	275
386 PC 21-21 2 MB	489

Terms and Conditions

1. AMT will meet or beat any advertised price.
2. Full five year warranty with all AMT upgrades.
3. Gov't, University, and qualified firms Purchase Order Accepted.

4. U.S. and International shipping via UPS, DHL and Federal Express.
5. All sales must include sales tax.
6. All sales must be C.O.D. cashier/certified checks.

7. There is a 15% restocking charge for all refused merchandise.
8. Prices subject to change without notice.

HOURS: Mon.-Fri. 8am-6pm Saturday 9am-3pm

SUN MICROSYSTEMS

Mdls 3/60; 3/80; 386i/150x; 4/60; 4/65;	
4/330; 4/370; 4/390; SPARC 1	
4 MB Memory Kit	\$299
Mdls 4/110; 386i/250	
X116D 16 MB Kit	850
Mdls 4/60; 4/65; 4/330; 4/370; 4/390	
X116H 16 MB Kit	850
Mdls 4/330; 4/370	
X108E 8 MB Kit	499
Mdl SPARC SLC	
X105Z 4 MB Module	250
SUN 3/100's series	
4-24 MB Exp Brd	950
SUN 3/200's; 4/200's; 3/400's series	
8-32 MB Exp Brd	1750
Mdl 3/50	
4-8 MB Exp Brd	769
Mdls 4/330	
8-64 MB Exp Brd	2699

AST RESEARCH
MEMORY

Premium II 386/SX20; 386/33T; 486	
500780-003 1 MB Module	\$75
500780-004 4 MB Module	225
Premium 386/33; -25; SX/16; 486/33; 25T;	
25; 25E	
Cupid Exp Brd 500722-004	
500718-002 1 MB Module	60
Premium 386/25; SX/16	
500718-001 1 MB Module	75
Premium 386C; 386/16; Advance FASTRAM;	
FASTboard 386	
500510-007 1 MB Kit	95
500510-008 4 MB Kit	225
Premium 386	
500510-003 1 MB Kit (static)	75
500510-004 4 MB Kit (static)	185
Cupid Exp Brd for Premium 386/25; 386/33;	
486's	
500722-004 1-16 MB Exp Brd	425
Premium Exec Notebook 386SX20	
1 MB Module	99
4 MB Module	210

ZENITH DATA SYSTEMS
MEMORY

Mdl Z-386SX	
Z-605-1 2 MB Kit	\$125
Mdls Z-386/33E; 33; 25; 20	
Z-3800-ME 1 MB Module	90
ZA-3800-MK 4 MB Module	205
SuperSport SX	
ZA-180-64 2 MB Card	199
ZA-180-86 2 MB Card (ALPHA)	199
ZA-180-87 2 MB Card (BETA)	199
SuperSport 286; 286E	
ZA-180-66 1 MB Card	185
SuperSport 286E	
ZA-180-64 2 MB Card	199
Turbosport 386E	
ZA-3034-ME 1 MB Card	199
4 MB Memory Card	495

MICRO-PROCESSOR

68020	16 MHz	\$129
	20 MHz	169
	25 MHz	179
	33 MHz	199
68030	16 MHz	129
	25 MHz	199
68010	16 MHz	60

QUME LASER MEMORY

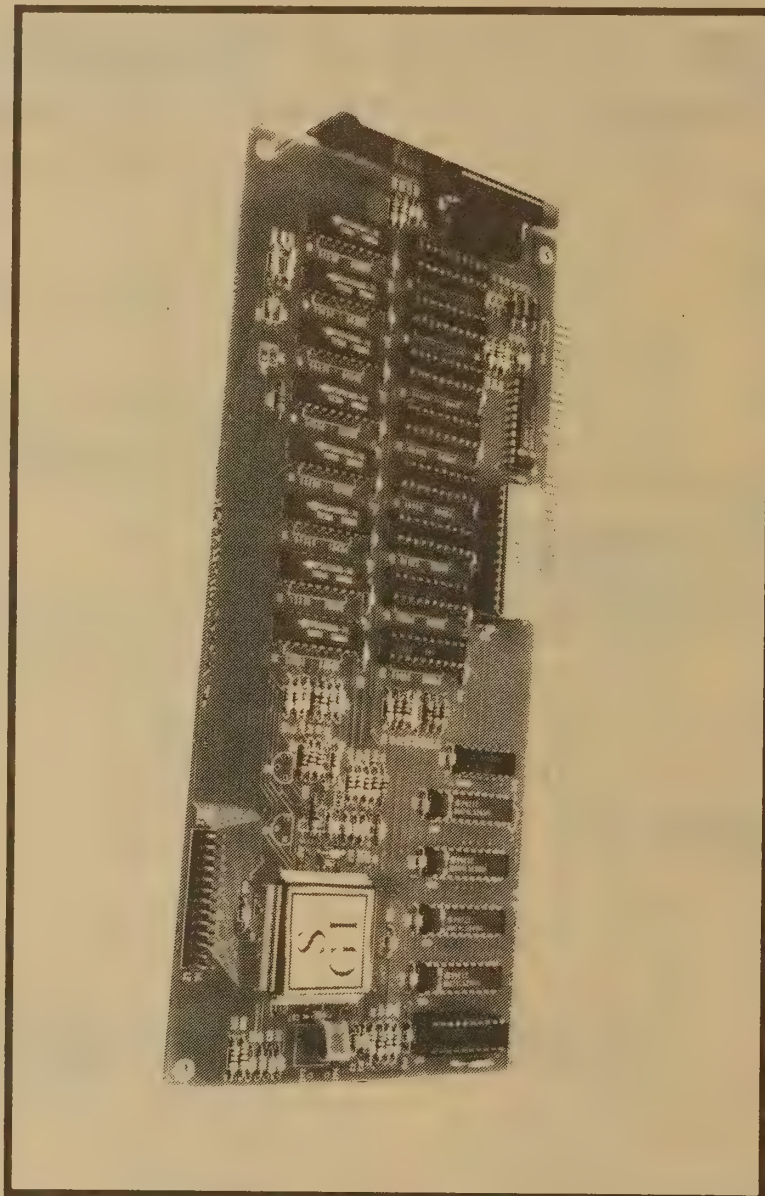
QS 410	
1 MB	\$99
2 MB	125
3 MB	150
4 MB	180

COMPAQ MEMORY

DeskPro 386/20e; 20; 35e; 25; 286e	
113131-001 1MB Module	\$99
113132-001 4MB Module	199
DeskPro 386/20e; 25e	
113644-001 1-9MB Exp Brd	150
113645-001 4-12MB Exp Brd	275
DeskPro 386s-16	
113646-001 1MB Module	99
112534-001 4MB Module	199
113633-001 1-9MB Exp Brd	160
113634-001 4-12MB Exp Brd	260
DeskPro 286N; 386N; 386SX/20	
118688-001 2MB Module	85
118690-001 4MB Module	180
DeskPro 386N; 386SX/20	
118689-001 2MB Module	120
DeskPro 286N; 386N	
118700-001 0-4MB Exp Brd	175
DeskPro 386/33L; 486/25; 486/33L;	
SystemPro	
115144-001 2MB Module	150

BREAK THE 8 BIT BARRIER WITH THE MOST AFFORDABLE VL-BUS GRAPHIC CARD!!!

INTRODUCING THE SPIDER VL-BUS



SPECIFICATIONS

- * VESA LOCAL BUS (VL-BUS)
- * Highest resolution of 1280 x 1024 in 256 colors (with 2MB of RAM)
- * Flicker-free high refresh rate of 72Hz (1024 x768, 800x600,640x480)
- * Display up to 16.7 million colors
- * 1MB display memory expandable to 2MB
- * Easy drivers installation with menu options for DOS and Windows

Drivers Supports:

- . WINDOWS 3.0 & 3.1
- . OS/2 VER 2.0
- . MS-WORD
- . AUTOCAD R9/10/11/12
- . ORCAD
- . PCAD
- . AUTODESK 3D STUDIO
- . AUTODESK-SHADE VER 2.0
- . GEM VER 2.2
- . LOTUS 1-2-3 R 2.0/2.1/2.2
- . SYMPHONY R 1.1
- . VENTURA PUBLISHER V 1.1-2.0
- . WORDPERFECT 5.0/5.1
- . WORDSTAR R.V4.0

DISTRIBUTORS AND RETAILERS PLEASE CALL (408) 956-1231
FOR INFORMATION OR DEMONSTATION.
END USERS PLEASE CALL (408) 956-1232 FOR DEALERS NEAREST YOU.

SPIDER GRAPHICS, INC.
801 AMES AVE., MILPITAS, CA 95035
TEL: (408) 956-1231
FAX: (408) 956-1314
BBS: (408) 956-1342



AiM FOR THE BEST!



90 Days 0% Financing For Systems Purchase **



FREE Software Installation With System Purchase
We Do Custom Systems Configuration & Upgrade



ORCHID 80486-25/33/50/66 32-Bit VESA Local Bus

- *Intel 486-25SX/33DX/50DX/66DX2 MHz
- *ORCHID Superboard w/256KB Cache
- *4MB DRAM 70ns (up to 32MB)
- *210MB 14ms IDE Hard Drive
- *ORCHID Fahrenheit VLB w/1MB (up to 2MB)
- *32-bit VESA Local Bus
- *1280x1024 Max. Resolution
- *16.8 Million Max. Color Display
- *TEAC 1.2MB Floppy Drive
- *TEAC 1.44MB Floppy Drive
- *KeyTronic 101+ Enhanced Keyboard
- *Logitech 3-Button Mouse w/ Pad
- *ORCHID VLB IDE Controller
- *32-bit 2HD/2FD VESA Local Bus
- *Max. 8 MB/s data transfer rate
- *2 Serials, 1 Parallel, & 1 Game Ports
- *Tower Case w/ 230 Watts Power Supply
- *Daul Cooling Fan



\$ 1419 / 1599 / 1819 / 1919

8X25 / DX33 / DX50 / DX66

(Monitor not included)

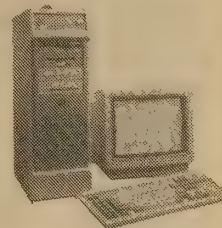
Novell Network Systems

- *System Design
- *Free Consultation
- *Complete Cable Installation
- *Software Support Installation
- *Pre-configured System

*EN 2000 16-Bit Ethernet Card	\$79
*EN1000 8-Bit Ethernet Card	\$74
*Novell 2.2.5 User	\$530
*Novell 2.2.10 User	\$1149
*Novell 2.2.50 User	\$2199
*Novell 3.11.5 User	\$630
*Novell 3.11.10 User	\$1149
*Novell 3.11.20 User	\$1699
*Novell 3.11.50 User	\$2599
*Novell 3.11.100 User	\$3499
*Netware Nite	\$69

80486-25/33/50/66 64KB Cache 130MB HD ISA

- *Intel 486-25SX/33DX/50DX/66DX2 MHz
- *64KB Cache Memory (up to 256 KB)
- *4MB DRAM 70ns (up to 32MB)
- *130MB 15ms IDE Hard Drive
- *SAMSUNG SyncMaster 3 1024x768 0.28dp SVGA monitor
- *REALTEK SVGA 1024x768 Graphic Card w/1MB & 65,535 Hi-Color
- *TEAC 1.2MB Floppy Drive
- *TEAC 1.44MB Floppy Drive
- *101 Enhanced Keyboard
- *Microsoft Compatible Mouse w/ Pad
- *2HD/2FD IDE Controller w/ 2 Serials, 1 Parallel, & 1 Game Ports
- *Tower Case w/230 Watts Power Supply
- *VESA LOCAL BUS UPGRADE OPTION (ORCHID Fahrenheit VLB & VLB IDE Controller)

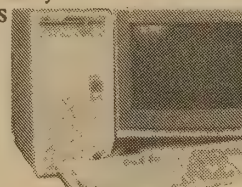


\$ 1249 / 1429 / 1699 / 1799

8X25 / DX33 / DX50 / DX66

80386-25/33/40 MHz ISA 105MB HD

- *386-25SX/386DX-25 0KB Cache Memory w/ 40MB HD & 2MB DRAM 70 NS
- or
- *386DX-33/386DX-40 64KB Cache Memory w/105 MB HD & 4MB DRAM 70 NS
- *SAMSUNG SyncMaster 3 1024x768 0.28dp SVGA Monitor
- *Trident 9000 1024x768 w/512KB SVGA Graphic Card
- *1.2MB Floppy Drive
- *1.44MB Floppy Drive
- *101 Enhanced Keyboard
- *Microsoft Compatible Mouse w/ Pad
- *2HD/2FD IDE Controller w/ 2 Serials, 1 Parallel, & 1 Game
- *Mini Tower Case w/ 230 Watts Power Supply (32KB Cache Memory for 386SX25 add \$20)

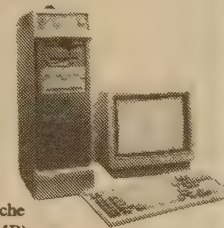


\$ 849 / 899 / 1089 / 1099

8X25 / DX25 / DX33 / DX40

Intel® 486-33/50/66 MHz EISA 32-Bit EISA VESA Local Bus

- *Intel 486-33DX / 50DX / 66DX2
- *256KB Cache VESA EISA LOCAL BUS
- *8MB DRAM 70ns (up to 32MB)
- *Orchid Fahrenheit VLB w/1MB (up to 1MB) 32-bit VESA Local Bus
- *1280x1024 & 16.8 Million Color
- *TEAC 1.2MB Floppy Drive
- *TEAC 1.44MB Floppy Drive
- *KeyTronic 101+ Enhanced Keyboard
- *Logitech 3-Button Mouse w/ Pad
- *Maxtor 213MB 15ms SCSI Hard Drive
- *Data Technology 32-Bit EISA SCSI Cache Controller w/512KB (upgradable to 4MB)
- *Full Tower Case w/250 Watts Power Supply & Daul Cooling Fan
- *Support MS-DOS, SCO UNIX, Interactive UNIX, Netware 386



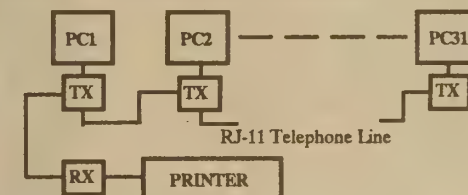
\$ 2299 / 2479 / 2579

DX33 / DX50 / DX66

(Monitor not included)

Error Free Printer Sharing Low-Cost network up to 31 computers

One device solve all your toughest printer sharing problems



Features:

- *Auto buffer to hard disk
- *Only 1 second for print job
- *250K bits/sec. data transfer speed
- *Up to 4000 feet transmission distance
- *40% files print queue
- *255 copies for each printing file
- *Normalize 4 wires RJ-11 telephone cable
- *No data miss
- *Flexible Auto. Switch
- *Up to 31 computers link
- *Only 1 AC adaptor required for receiver
- *Time out selectable 10, 15, 30, 60 sec.

Bufferlink Transmitter (TX) \$45
Bufferlink Receiver (RX) \$49

Monitors

14" SVGA Color Monitor 1024x768 .28	\$269
14" SVGA Color Monitor 1024x768 .28 NI	\$309
Samsung 15" SyncM. 15 .28 1024 NI 70Hz	\$489
Samsung 17" SyncM. 4+ .28 1280 NI 70Hz	\$849
Samsung 17" SyncM. 5c .26 1280 NI 72Hz	\$939
ViewSonic 4E 1024x768 .28	\$305
ViewSonic 5E 1024x768 .28 NI 72Hz	\$415
ViewSonic 5+ 1024x768 .25 NI 70Hz	\$525
ViewSonic 6E 1024x768 .28 NI 60Hz	\$349
ViewSonic 6FS 1024x768 .28 70Hz Flat	\$599
ViewSonic 7 17" 1280x1024 .28 NI 72Hz	\$999
ViewSonic 8 20" 1280x1024 .31 NI 72Hz	\$1550
SONY 1304S 1024x768 .25 NI 60Hz	\$575
SONY 1604S 17" 1024x768 .25 NI 70Hz	\$999
NEC 15" 3FGx 1024x768 .28 NI 60Hz	\$649
NEC 15" 4FG 1024x768 .28 NI 70Hz	\$749

* w/system

Graphic Cards

Oak 800x600 w/512KB	\$42
REALTEK 1024x768 w/1MB & Hi Color	\$65
Trident 8900C 1024x768 w/1MB	\$65
Trident 9000 1024x768 w/512KB	\$45
Paradise Graphic Accelerator w/1MB & Hi-Color	\$189
Tseng Lab 1024x768 w/1MB	\$99
Orchid Fahrenheit VESA VLB w/1MB	\$159*
Orchid Fahrenheit VESA VLB w/VA 1MB	\$199*
VESA IDE Controller 2HD/2FD	\$69*
Orchid Fahrenheit VA w/1MB & Hi-Color	\$199*
Diamond SpeedStar w/1MB 24-bit Hi-Color	\$148
Diamond 24X w/1MB & Hi-Color	\$179
Diamond Stealth 24VLB w/1MB True-Color	\$189
Diamond Viper VLB w/1MB w/ True-Color	\$369
ATI Ultra Graphic Pro w/2MB VRAM	\$529
(ISA, EISA, MCA, VL)	

Softwares

Microsoft DOS 5.0	
Digital Research DR-DOS 6.0	
IBM OS/2 Version 2.0	
Microsoft Windows 3.1	
Microsoft Access for Windows	
Microsoft Excel 4.0 for Windows	
Microsoft Entertainment Pack 1-3	
Microsoft Flight Simulator 4.0	
Microsoft Word 2.0 for Windows	
Lotus Ami Pro 3.0 for Windows	
WordPerfect for Windows 5.2 (NEW!)	
PFS: Windows Work	
BitFax for Windows w/OCR & BitCom	
MultiMedia Upgrade Kit (CD-ROM, CDs, Sound Blaster Pro, Midi,.....)	
SONY Internal CD-ROM w/controller	

Miscellaneous

\$35* Logitech Serial/Bus MouseMan & TrackMan 2	\$65/\$75
\$66 Logitech Scanman 256 w/OCR 400DPI	\$299
\$79* Microsoft serial mouse	\$69
\$35* KeyTronic 101+ enhanced keyboard	\$45
\$95 Maxiswitch 101 enhanced keyboard	\$39
\$125 Northgate Omni 101/102 enhanced keyboard	\$75
\$25@ Northgate Omni Ultra 118 key enhanced keyboard	\$95
\$38 Zoltrix 14.4K/14.4K Fax Modem w/Bitcom & Bitfax	\$230
\$125 Zoltrix 2400/9600 Fax Modem w/MNP5 & BitFax for Win	\$59
\$99 Zoltrix 2400 Baud Internal Modem	\$40
\$115 TEAC 1.2MB/SONY 1.44MB Floppy Drive	\$58/\$54
\$65 Sound Blaster Mono/Pro Basic Sound Card	\$95/\$159
\$99 Motherboards & CPUs (286, 386, 486, EISA, Local Bus)	Call
\$565 Hard Drives (IDE, SCSI, ESDI)	Call
SIMM, SIPP, & DIP DRAMS	Call
\$295 Dot Matrix Printers, LaserJet Laser Printer & Memory	Call

Ask for Upgrade Option on **USA** Made AMI, Micronics, Mylex, Nice, Orchid ... Systems

AiM Computers

1741-C Clayton Road, Concord, CA 94520

TEL: (510) 687-2822

FAX: (510) 687-5276

Hours: M-F 10-6:30
Sat 10-5

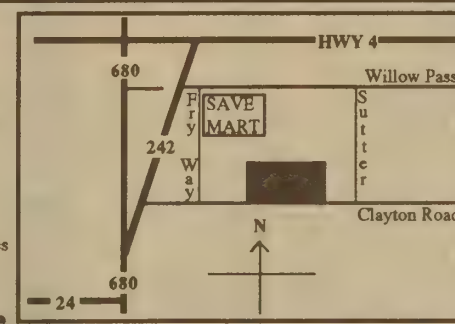


AiM Quality Guarantee

- * 5 Years Labor & 1 Year Parts
- * 72 Hours Burn-In

Prices subject to change without notice
Not responsible for typographical errors
Trademarks are registered by the respective companies
Contents subject to change without notice
** Upon credit approval, see store for detail

100% Financing & Leasing Available



ASA COMPUTERS

ASA COMPUTERS ROADRUNNER SERIES

Local Bus 486-33/66 Mini Tower, 4MB, IDE VESA, 1.44 Floppy Drive, 212 MB Hard Drive, VESA SVGA, 14" 39 Color Monitor, 101KB, DOS 5.0..... \$1499/1769	386 DX-40 w/64K Cache Mini Tower, 4MB, IDE Cont., 1.44 Floppy Drive, 80MB Hard Drive, VGA Card, 14" 39 Color Monitor 14" 39 Color Monitor..... \$789	486 DX 33 MHz 64/256 Cache Mini Tower, 4MB, IDE Cont., 1.44 Floppy Drive, 212MB Hard Drive, VGA Card, 14" 39 Color Monitor, 101KB, DOS 5.0..... \$1219/1239
386 SX-25 Mini Tower, 2MB, IDE Cont., 1.44 Floppy Drive, 80 MB Hard Drive, VGA Card, 39 Color Monitor 14" 39 Color Monitor..... \$669	486 SX-25 Mini Tower, 4MB, IDE Cont., 1.44 Floppy Drive, 130MB Hard Drive, VGA Card, 39 Color Monitor 14" 39 Color Monitor..... \$869	486 50/66MHz w/ 256K Mini Tower, 4MB, IDE Cont., 1.44 Floppy Drive, 200MB Hard Drive, VGA Card, 14" 39 Color Monitor, 101KB, DOS 5.0..... \$1419/1519

LOCAL BUS

MOTHERBOARDS
ASA 486-33/50 w/256k.....530/681
ORCHID 486-33/50-256.....570/800
Diamond Fastbus 33/50-256.....614/835

CONTROLLERS

DTC 2270 8.3MB/sec IDE/IO.....95
ASA IDE/IO.....76
ORCHID IDE/IO vlb.....68
PROMISE IDE/IO Cach15.6mb.....198
UltraStor SCSI-34F, 32k.....319

GRAPHIC ADAPTERS

wm = winmark ver2.5
DIAMOND
Stealth 24v/b S3-805.....179
Stealthpro/2MB ram, 36wm.....260/380
Viper 1/2MB, 9000, 50wm.....334/422
ORCHID
Farenheit S3-805, 1/2MB.....165/??
Same with voice annotation.....219/??
Celsius 9000.....coming soon
GENOA
ET4000.....149
8500VL, cirrus logic.....142
8700VL, S3-805.....180
ATI
Ultra Pro, 2MB, 26wm.....460

TERMS

2% off on items that are not in stock & you are willing to wait for them.....
1% more off if item is not in by promised time [or shipped freight free].
COD, FOB Santa Clara.
Besides Purchase Orders [on approval of credit terms], Credit Cards, Cheques, we accept Cash too.
Warranty -- Parts -- one year.
Labor -- 3 years on systems assembly only.
Not responsible for typos.
Prices are subject to change.

MOTHERBOARDS

286-12/20.....53/60	386SX-16/25.....85/94	386DX-40 w/64k cache.....153	486SX-25.....199	486DX-33 w/ Mathco.....285
ISA 486DX-33 w/64k.....439	ISA 486DX-33 w/256k.....459	ISA 486DX-50 w/256k.....624	ISA 486DX-2-66 w/256k.....719	EISA 486DX-33 w/256k.....559
EISA 486DX-50 w/256k.....729	EISA 486DX-2-66 w/256.....829	VESA 486DX-33 w/256.....509	VESA 486DX-50 w/256k.....679	VESA 486DX-2-66 w/256.....769

CASES/PS

Baby Desk/Tower w/ PS.....\$54	Baby Desk PS Del.....\$69	Medium Tower/Full AT w/ P.....\$79/69	Full Tower/Super T. w/PS.....\$99/155	Rack Mount W/PS.....\$299	File Server w/ 400W PS.3 Fans.....\$494
12 F/HDD, black/beige.....\$88	BLACK	Baby Desk/Tower w/PS.....\$127	Medium w/PS.....\$138	Full Tower w/PS.....\$110	1FH/2HH.....\$137
2FH/3HH.....\$9/10	SCSI Cables Int/Ext.....\$34	XT Power Supply.....\$34	PC Power XT Turbo Cool 230.....\$80	220 AT.....\$46	PS2 200W.....\$40
PS2 300 W.....\$95	Full Tower 230W.....\$58	Full Tower 300/400.....\$80/154	UPS's see in Networking Products Engineering section		

ADAPTERS

DTC.....\$119	Maple 64K.....\$107	Ultra 12F 32K.....\$164	Ultra 22F Caching EISA.....\$449	XT FDC360/1.2.....\$13/24	XT HDC.....\$45
ESDI	DTC.....\$119	Maple 64K.....\$107	Ultra 12F 32K.....\$164	Ultra 22F Caching EISA.....\$449	XT FDC360/1.2.....\$13/24
XT HDC.....\$45	XT FDC360/1.2.....\$13/24	XT HDC.....\$45	MGP.....\$12	Color Card.....\$23	VGA/SVGA
VGA 256k.....\$25	VGA 512K.....\$38	Trident 1MB.....\$55	Tseng 1MB.....\$75	Orchid II, IIs.....\$134	Orchid IIs w/ 32K Color.....\$159
Orchid Fahrenheit w/sys.....\$209	Genoa 1MB 32K Color.....\$132	V7 VRAM II 1MB.....\$285	Diamond Stealth.....\$189	Mylex GLI.....\$249	ATI Ultra Grpx 1MB.....\$279

ASA COMPUTERS DIAMOND SERIES

Local Bus 486DX2-66 w/ 256 Tower Case, 4MB, VESA IDE, 2SPG, 1.44 Floppy Drv, 212MB Hard Drive, VESA SVGA Crd, Samsung 15" Color Monitor, 101KB, Mouse, DOS 5 WIN 3.1..... \$2190	386 DX -40 w/64K Cache Medium Tower Case, 4MB, IDE Cont. 2SPG, 1.44 Floppy Drv, 80MB Hard Drive, 512K SVGA Crd, Samsung 15" Color Monitor, 101KB, Mouse, DOS 5 WIN 3.1..... \$1225	486 DX 33 256K Cache Full Tower Case, 4MB, IDE Cont. 2SPG, 1.44 Floppy Drv, 170MB Hard Drive, 1MB SVGA Crd, 15" Color Samsung Monitor, 101KB, Mouse, Dos 5.0, Win3.1..... \$1735
386 SX -25 MHz Mini Tower Case, 2MB, IDE Cont. 2SPG, 1.44 Floppy Drv, 80MB Hard Drive, 512K SVGA Crd, Samsung 15" Color Monitor, 101KB, Mouse, DOS 5 WIN 3.1..... \$1070	486 SX -25 MHz Medium Tower Case, 4MB, IDE Cont. 2SPG, 1.44 Floppy Drv, 130MB Hard Drive, 1MB SVGA Crd, Samsung 15" Color Monitor, 101KB, Mouse, DOS 5 WIN 3.1..... \$1355	486 60 DX 256K Cache ISA/EISA Full Tower Case, 4MB, IDE Cont. 2SPG, 1.44 Floppy Drv, 212MB Hard Drive, 1MB SVGA Crd, Samsung 15" Monitor, 101KB, Mouse, DOS 5, WIN3.1..... \$1995/2095

DRIVES

Floppy	Teac 1.2/1.44.....54/48	Other Japan. 1.2/1.44.....50/45
IDE	ST CON 20/40.....\$104/144	CON/WMD 80.....\$189
CON/MXT/ST 120/130.....\$228	CON 170.....\$274	CON/MXT 212.....\$339
CON/MXT/WD 245.....\$379	WD/CON/MXT 340.....\$535/585/570	MXT 535.....\$929
Fuji/CON 425MB/540MB.....\$915/975	ST80.....full h.....\$259	MXT338/670.....\$1065/1190
SCSI	CON 40.....\$209	CON/MXT 120.....\$299
CON/MXT 212/340.....\$399/599	FUJ 425M/2623FA.....\$819	ST89 5.25".....\$287
STMX/ST 172/338 5.25".....\$607/1057	FUJ 540.....\$889	FUJ 680.....\$1199
FUJ 1G.....\$1365	STMX/ST 680MB [fmd cap].....\$1090	MXT 1.2G PANT/MAGIC.....\$1359/1989
STMX/ST 1.4GB [fmd cap].....\$1625	STMX/ST 1.9GB [fmd cap].....\$2195	FUJ/ST 2.0GB.....\$2489/2135
FUJ/ST 2.4GB.....\$1075/1409	Tosh 877 1/2G.....\$1075/1409	

REMOVABLE

Syquest 44MB Dr.....\$290	w/ Ext Cs, Cbils, cartridge, Cont\$485	Syquest 88MB Dr.....\$359	Bernoulli 44 Insider.....\$907	Bernoulli 90 Insider.....\$840
Cartridges see storage media	IDE: Upto 1GB removable kits.....\$39	SCSI: Upto 1GB RemKits.....\$138	OPTICAL DRIVES	Maxoptix int 1GB.....\$2725
Panasonic int 1GB.....\$2489				

MONITORS

Mono 12".....\$73	Mono 14".....\$91	Mono 9" VGA.....\$135	Mono 14" SVGA.....\$109
Black SVGA 1024, 28	VGA 13" .28 Color.....ref.....\$279	VGA 14" .39 Color.....ref.....\$150	VGA 640, 51/41.....\$175/197
SVGA 28.....\$249	SVGA CXTX Autoswitch.....\$255	V6.....\$343	Sony 1304S.....\$545
SVGA CXTX non interlaced.....\$299	Samsung 15" 72 Hz ref NI.....\$489	Mitac 15" 17.....\$409/699	Samsung 17" .26 dpi 1280 NI.....\$925
Magnavox 20" 1280 NI.....\$1357	see our engineering section for a bigger list of monitors.		

STORAGE MEDIA

Floppy 1.44 Bulk.....\$79	Floppy 1.2 Bulk.....\$49	Tape DC2000XL.....\$18	DAT 4mm 60/90 mtr.....\$19/29
DAT 8mm 54/112 mtr.....\$18/24	Syquest 44MB Cart.....\$66	Syquest 88MB Cart.....\$97	Bernoulli 44MB 3PK.....\$315
Bernoulli 90MN 3PK.....\$415			

TAPE

Colorado 120/250MB.....\$189/245	Colorado 700MB.....\$699	Colorado 2.4/4 GB.....\$1000/1600	Col traker ext 120/250.....\$359/498
Archive 215S/525S.....\$477/729	DAT Tape HP 2GB.....\$1125	SYTOS drivers.....\$195	

NOTEBOOK DRIVES

80MB 2.5" IDE.....\$190	120MB 2.5" IDE.....\$276	1.2MB External Drive.....\$175
-------------------------	--------------------------	--------------------------------

CD SOFTWARE

OVER 200 TITLES IN STOCK	ACCAC BPI.....CALL	ACCAC PLUS.....CALL	CRYSTAL SERVICE.....	ACCAC SUPPLIMENTS.....\$89	Jian BizPlan Builder.....\$89	Jian Employee Manual Builder.....\$89	Jian Living Trust Builder.....\$89	[Sales and Support on all ACCPAC Modules].....
--------------------------	--------------------	---------------------	----------------------	----------------------------	-------------------------------	---------------------------------------	------------------------------------	--

ENGINEERING CAD/CAM

M o n i t o r s	
15MVX 15" FST, 28, LMF, 70Hz, \$499	
CM2085 20" 1280 Anti Glare, \$1275	
CM2087 20" 1280 72Hz Micro, \$1675	
CM2187 21" FST 1600 Micro, \$2185	
Plotters	
P17CU01 17" FST, 1024, 70Hz, \$760	
P17CS01 17" FST, 1280, 26, \$1150	
Sony	
CPD1304S 14" MPRL/70Hz, \$540	
CPD1604S 17" Orig/OEM, \$985/905	
CPD 1430 14", \$595	
Idek	
MF5217 17" 60/70Hz, \$855	
MF5221A 21" LMF, 1280, 72Hz, \$1920	
MF5421A 21" LMF, 1600, 26, \$2290	
Sampo	
Sampo, 17" N11280x1074, \$700	
Sampo, 20" N11280x1084, \$1040	
Nanaco	
90801 16", 1280, 28 MPRL, \$945	
F5501 17" FST, 1280, 26 MPRL, \$1085	
T5601 17" Trin, 1280, 26 MPRL, \$1799	
T6601 20" Trin, 1280, 72Hz MPRL, \$2549	
Magnavox	
20CM64 20", 1280NI, 31, \$1357	
NEC	
3FGX 15", 25, \$649	
4FG15", 25, Microp, \$730	
5FG 17", 26, Microp, \$1375	
6FG 21", 26, Microp, \$2835	
MAG mX15/17F , \$629/1179	
Call for updated prices	
GRAPHIC ADAPTERS	
NUMBER NINE #9GX1	
L22 Win, T34020, 1280, 72Hz, 16C, \$917	
L23 ACAD, T34020, 1280, 16C, \$955	
L24 Win, T34020, 1280, 256C, \$1286	
L25 ACAD, T34020, 1280, 256C, \$1209	
L28, \$1315	
HERCULES	
GOLD 16, T34010, \$295	
GOLD 16+2, T34010, \$425	
GOLD 24, T34010, 24 Bit, \$365	
GOLD 24+2, T34010, 24 Bit, \$495	
VMI	
X/Series 16, 1280, 72Hz, DPC, \$1497	
X/Series 256, 1280, 72Hz, DPC, \$1797	
Cobra Sp, 1024, 72Hz, Rend Ray, \$1077	
MYLEX	
GXE020B T34020, \$1045	
DIAMOND COMPUTERS	
Speedstar 24X, \$159	
STEALTH 1MB, \$189	
GENOA	
7900 16m Color (24 bit), \$129	
7960 1MB Hi-Color, \$132	
8860 S3 Chip Hi-color, \$209	
The bold items are always in stock	
Sorry, we don't have all Monitors, Plotters, Digitizers, & Scanners on Display.	
Please treat these as Catalog orders.	

NOTEBOOKS

TWINHEAD SLIMNOTE	
386 SXL-25, 2MB, 60MB/80MB, \$1294/1399	
486 SLC-33, 2MB, 80MB/130MB, \$1650/1794	
LEADING EDGE	
386 SXL-25, 4MB, 80MB, \$1431	
386 SL-25, 2MB, 80MB, COLOR, \$1980	
CHAPLET	
386 SX25, 4MB, 80MB/120MB, \$1199/1399	
486 SLC, 2MB, 80MB/120MB, \$1475/1599	
Medium Carrying case, \$49	
Call for high end notebooks and notebook accessories.	

S E R V E R S

Ask for free brochures on ASA
Thoroughbred family of servers
Novell, UNIX, or CAD pre-installed....

PLOTTERS DIGITIZERS SCANNERS

PLOTTERS

HOUSTON INSTRUMENTS

Im Maker 1117, A/B, 8 Pen, HPGL, \$662	
DMP-161 A-D, 8 Pen, HP-GL/2, \$2799	
DMP-162 A-E, 8 Pen, HP-GL/2, \$3625	
DMP-162R A-E, 8 Pen, Roll Med, \$4835	
ENCAD	
SP600 A/B, 6 Pen Desktop, \$585	
SP1800 A/D, 8 Pen, Sheetfeed, \$2480	
SP2800 A/E, 8 Pen, Sheetfeed, \$3080	
SP4820 A/D, 8 Pen, Roll Feed, \$4295	
SP4830 A/E, 8 Pen, Roll Feed, \$4648	

DIGITIZERS

SUMMAGRAPHICS

III 12x12 w/16btn or 4bt & Pen, \$314	
III 12x18 w/16btn or 4bt & Pen, \$569	

KURTA

XLP 12x12 w/4bt & Pen, \$275	
XLP 12x18 w/16btn or 4bt, Pen, \$529	
IS/ONE 12x12 4bt/12bt/Pen, \$339	
IS/ONE 12x17 4bt/12bt/Pen, \$575	
(IS/ONE also available w/Cordless, \$495)	
...4bt or Pen at same price)	

SCANNERS

AERO/ARTEC

Hand BW 16 Greyscales, .90% cor., \$99	
Hand BW 16 Greyscales, .98% cor., \$149	
Hand 256 Greyscales, \$199	

MICROTEK

Edge Feed MS-II Omni, Kit, \$729	
Flatbed 600G Photostyle, Kit, \$1056	
Flatbed 600Z Photostyle Kit, \$1344	

THE COMPLETE PC

1/2 Page 400, \$196	
1/2 Page Greyscale, \$256	
Page w/Calera WS, \$589	
Complete Flatbed, \$978	
ARTISCAN (Flatbed)	
3000C 300dpi, 24bit color, \$1045	
6000C 600dpi, 24bit color, \$1130	
8000C 800dpi, 24bit color, \$1425	
Slide Scan Kit, \$585	

ASA COMPUTERS

NETWORKING PRODUCTS

ADAPTERS/KITS

NOVELL ORIGINAL

NE2000 16bit ThinThick, \$141	
-------------------------------	--

ADVANCED LAN NETWORK

NE2000 Comp 16bit ThinThick, \$69	
NE1000 Comp 8bit ThinThick, \$69	
Arnet 8/16 bit, \$59/69	

WESTERN DIGITAL(SMC)

16 bit Ethernet ThinThick, bulk, \$139	
--	--

3COM

3C503 16bit Coax/10BaseT, \$162/174	
3C507 16bit Coax/10BaseT, \$274/294	

D-LINK

16 bit10BaseT, \$129	
MYLEX LNE EISA, \$327	

ARTISOFT

AE-2/3 Lantastic Kit, \$449/525	
AE-2/3 Lant Kit for Win, \$499/575	
AE-2/3 16 bitAdapter, \$196/231	
Z-2 Lite Kit 2 Stations, \$94	

POCKET LAN ADAPTERS

ADVANCED LAN NETWORK

CN50ET10BaseT, \$185	
CN50E Coax10Base2, \$185	
CN50AArnet, \$149	

HUBS

D-LINK 12 Port10BaseT, \$495	
D-LINK 4 Port 10BaseT, \$265	
D-LINK DE-1500 w/SNMP, \$875	
Ad LAN 8 Port 10BaseT, \$295	

INTELLIPOINTS

COMPUTONE

Advantage 8 AT/V8DB25, \$515	
Intelliport AT8DB25, \$625	
Intelliport AT16DB25, \$1088	

UPS's

AMERICAN

POWER

APC 200/400VA, 5 Min, \$99/163	
APC 600VA BK, SB, 10 Min, \$263	
APC 800VA, SB, 10 Min, \$549	
APC 1200VA, SB, 10 Min, \$769	
APC SMART400/600, \$304/395	
APC SMART 800/1250, 634/769	
Power Shoot Novell/Unix, \$74/84	
SERENA 5.25 insider 300VA in PC, \$199	

NOVELL NETWORK

Ver 2.2 5/10 User, \$485/1079

Ver 2.2 50/100 User, \$1899/2895

Ver 3.11 5/10 User, \$595/1339

Ver 3.11 20/50 User, \$1879/2742

Ver 3.11 100/250 User, \$3795/6767

LITE, \$69

(NOVELL PREMIUM NETWORK -

FREENEXTUPGRADE-Available)

NETWORK CABLES

ETHERNET RG58 CABLES

Readymade w/Conn 10'/25'/50'..

1000' SPOOL, \$4/8/12

Terminators/All Conn, \$1.5 ea.

MULTI MEDIA

Sony CD-ROM 535 Int Kit, \$290	
Sony CD-ROM 541 Int SCSI, \$420	
NEC CDR-84/74 280ms Access, \$620	
300KB/sec, Int/Ext, \$554/618	

Toshiba bxm3401B/E, Int/ext, 485/575

..200ms access, 330 kb/sec

Texel DM 3024/5024 265ms Access

300 KB/sec Int/Ext, \$385/480

7 Pak., [Animals, Grol Ency 5.0, World &

Us3.0, Bruce Li, Games II], \$110

Over 200 titles in stock

SOUND BOARDS/KITS

MEDIA VISION

Thunder Lt, 24 bit Grph, 8 bit Snd, \$229

Pro Audio Spectrum 16, \$189

Multi-Media Upgrade Kit Plus Int, \$715

..Upg Kit Pro16, Int/Ext, \$925/1019

Multi-Media Video Adapter, \$834

CREATIVE LABS

Multi-Med Upg Kit Int/Ext, \$530/599

Video Blaster, \$339

Software Dev. Kit, \$99

NEC Multi-Med Gallery, \$845

SoundBlaster 16..[new].....? \$42

TURTLE BEACH

Prof Sound Card, \$530

Sound Editing Software, \$89

Turn your Monitor into aTV, \$249

COMPUTER VIDEO

AIITECH

Pro Color 16 bit32k, \$525

Pro VGATV/Plus w/ soft, \$439/619

Pro PC Video Full Motion, \$449

LOGITECH

Fotoman, \$470

COMMUNICATIONS

MODEMS/FAXES

2400 Modem Intf/w/ send fax, \$35

2400 Modem Ext, \$69

2400 Pocket Modw Fax, \$84/125

96/48/24 Fax/Mod for win, AMS, \$54

96/24 FAX/Mod Win Int/Ext, \$62/145

14400 Modemw/ fax, int, \$215

THE COMPLETE PC

The Complete Communicator, \$299

US ROBOTICS

9600 V.32 V.42bis, Int/Ext, \$257/285

14,400 Spr Md Int/Ext, \$270/290

..w/Fax Add, \$20.00

14,400 CHST/PC-N Int/ExtV.42 \$504/524

14,400 HST Courier DualV.32bis \$769

PRINTER SHARING

AUTO SWITCHES

2 Computers to 1 Printer, Bi-dir, \$49

4 Computers to 1 Printer, Bi-dir, \$69

2/4 Auto-switches, \$25/39

MANUAL SWITCHES

2 Computers to 1 Printer, \$14

4 Computers to 1 Printer, \$19

Printer sharing Networks - low cost

alternatives to LAN - Please fax your

specific requirements for a proposal..

PRINTERS

Star Micronix NX 1001 9pin, \$134	
Panasonic	
KXP4410i 5ppm, 300dpi, 28f, \$620	
KXP4450i 11ppm, 300, 28f, \$1090	

CANON

BJ 10EX 360DPI BLK/WHIT, 279/289

BJ 20 w/ auto sheet feeder, 375

Okidata

OL400, 4ppm, 300dpi, \$599

w/ 2.5MB, \$735

OL810, 8ppm, 300dpi, \$1040

w/ 4.5MB, \$1225

OL830, w/ 2MB post script, \$1278

(Ok) Laser \$50 Coupon, \$315

Ok ML320 320cps dot matrix, \$315

Lasermaster 1000 dpi 10ppm, \$4995

Citizen

200GX 9 pin, \$159

GSX230 24 pin, \$255

color option works on both, \$42

GSX145 24 pin wide, \$374

Notebook Pr. CTZPN48 w/bat, \$359

Pr Cable 6'15", \$375

Laser Extension Memory

HP IIP, IIP, 2/4MB, \$88/147

HP II, IID, 2/4MB, \$104/163

HP IISI, 1/4MB, \$59/148

HP IV 4/8MB, \$149/289

Pan 441/2/30, 4450i, 2/4MB, \$118/178

Pan 4450, 1MB, \$113

Pan 4455, 2MB, \$134

Ok400, 2MB, \$99

Ok 80

PanPacific Computer Corporation

We are a diversified supplier of both high-end and low-end PC-AT add-on cards. PanPacific has invested heavily in research engineering and product development. Our commitment to excellence drives our search for products with the highest quality while maintaining the lowest costs.

We offer a wide range of products that keep you on the cutting edge of computer technology. Our knowledgeable technical staff understands the needs of computer users and are ready to provide solutions by the most effective and efficient means available. All of our products come complete with unlimited lifetime technical support and a comprehensive one-year parts and labor warranty.

PanPacific knows that our commitment to quality products and service excellence keeps you on the cutting edge of technology.



Mother Board + CPU

486DX2-66/256K	\$715	486DX-50/256K	\$596
486DX-33/256K	\$447	486DLC-33/64K	\$295
486SX-25/64K	\$200	386DX-40/64K	\$160
386-33	\$91	386SX-25	\$82

Simultaneous Memory

1Mx9.3 CHIPS 70NS	\$30	1Mx9.3 CHIPS 60NS	\$33
4Mx9.3 CHIPS 70NS	\$125	4Mx9.3 CHIPS 60NS	\$140

Disk Controller

IDE 2FD/2HD 2S/1P/1G	\$19	AT-IO 2S/1P/1G	\$15
IDE/SCSI CONTROLLER	\$150	Adaptec 1542B SCSI	\$245
IDE CACHE VESA LB	\$180	UltraStore 34F SCSI	\$314

Computer Cases

Mini-Tower 200W	\$57	Med-Tower 230W	\$76
Full-Tower 250W	\$105	Desk-Top 220W	\$95

Floppy Drives

Teac 1.2 FD	\$55	Teac 1.44 FD	\$50
-------------	------	--------------	------

Graphic Cards

ET4000/1M	\$85	SVGA CARD/512	\$40
S3/1M VESA LB	\$180	GENOA 8500VL/1M	\$135
Diamond Stealth	CALL	Diamond Viper	CALL
Fahrenheit 1280 VA/VLB 1M Voice Annotation	\$315		

Monitors

SVGA 28DP Inter	\$250	SVGA 28NI	\$300
IDEK MF5117 17" NI	\$1100	IDEK MF52117 17" NI	\$990
MAG MX15F 15" NI	\$570	MAG MX17F 17" NI	\$1100

LAN Cards

3COM ETHERLINK III 3C 509-TP, 3C509	\$1525
3COM TOKENLINK III 16/4 16-BIT ISA 3C619	\$700
Novell Netware Lite 1.1	\$99
Novell Netware V3.11 5 Users	\$1095

Note Book Computers

386SX-25	\$1140	486SLC-25	\$1525
Each comes with 2M DRAM (4M for 486) 60MB HD, 1.44M, Dos 5.0, Mono VGA, 680 x 480, 2S/1P/1G			
Upgrades:			
to 4M DRAM	\$65	Battery	\$70
FAX/MODEM INT	\$105	80M Hard Drive	\$65
120MB Hard Drive	\$210	200MB Hard Drive	\$360
All come with 1 year factory warranty.			

VESA LOCAL BUS BOARDS

Mother Board

486DX2-66/256K VLB	\$74
486DX2-50/256K VLB	\$62
486DX-50/256K VLB	\$62
486DX-33/256K VLB	\$47

VGA Graphic Cards

Diamond 24VLB	\$180	Upgrade	Add \$14
Genoa 8500VL	\$135		\$10
S3 VLB 1M/50-MHz	\$180		\$14
ET4000 VLB/1M	\$145		\$11

Hard Disk Controller

IDE Cache Vesa	\$180	UltraStore 34F SCSI	\$1
----------------	-------	---------------------	-----

Computer Systems

486DX2-66/256K	\$2547	486DX-50/256K	\$13
486DX-33/256K	\$1288	486DLC-33/256K	\$11
386DX-40/256K	\$999	386SX-33	\$8

ALL SYSTEMS INCLUDE:

•Mother Board & CPU •4M DRAM 70NS (2M for 386SX-33) •Maxtor 130M HD •2Serial/1Parallel/1Game Port •1.2M & 1.44M Floppy Drives •SVGA card 512K •1024 x 768 .28 DP SVGA Monitor •Mini-Tower/200W •Enhanced 101 keyboard •3 button mouse

Upgrades:

to 170M HD +\$40 to 210M HD +\$110 to ET4000/1M SVGA +\$40 to Non-Interlaced Monitor +\$40 to VESA Local Bus +\$30

Note Book Computers

386SX-25/2M DRAM/60M HD \$1140 486SLC-25/4M DRAM/60M HD \$1525

Upgrades:

to 4M +\$65 to 80M HD +\$65 to 120M HD +\$210 to 200M HD +\$360

Accessories:

Battery \$70 Internal Fax/Modem \$105

*Bring your Student ID or Business License and receive a 3% discount

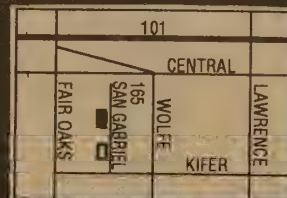


PanPacific Computer Corporation

165 SAN GABRIEL DR.
SUNNYVALE, CA 94086

TEL: (408) 720-1315
FAX: (408) 720-1102

HOURS:
M-F 9-5:30
SAT 10-4



One year warranty on parts and labor.
Price: Availability, subject to change w/o notice. Shipping and handling not included/refundable. We assume no responsibility for express. All prices reflect cash discounts.

ART COMPUTER TECH INC.

424 S.MAIN STREET., MILPITAS,CA

Tel. (408) 946-7852 * FAX (408) 946-7892

Make us your last stop, we will beat any advertised price

Be smart! Join our satisfied customers

AMD, ADAPTEC, CIRRUS LOGIC, UC DAVIS, CONDUCTUS, ASTEC, ELANTEC, SEAGATE, STANFORD UNIVERSITY, UC BERKELEY, LAWRENCE LIVERMORE LAB., ANALOG DEVICES, FRANK & RIVERMAN CPA, ACCUSON, MADERA CITY POLICE DEP., NASA, ALLIED ENGINEER, TESTERION and many more

BASIC SYSTEM CONFIGURATION: Motherboard & CPU, 1MB memory installed, 1:1 2HD/2FD controller, 1.2MB or 1.4MB Floppy drive, Internal Clock (Calendar, Enhance Case or Mini Tower Case with Power Supply, and 101 Enhance Keyboard).

 Motherboard + CPU	BASIC system	VESA Local bus system Basic system w/ 4MB+1.4FD+210MB HD+VLB Video card+VIEWSONIC 6E	+SVGA SAMSUNG (ESP) Interl (1024x768) 0.28P +16bit (512K) Trident	IMPRESSION PLUS 1024x768 28P+16 BIT (1Meg) Trident	+Viewsonic 6 or ADI Noninterl (1024x768) 28P + 16 million colors (1Meg) Art Design IV	
ORCHID/DIAMOND 486/33 VESA	\$620	\$800	\$1799	\$ 1435	\$ 1475	\$ 1564
386-33/40w/64K exp up to 256 cache	\$ 160	\$ 305	PLEASE CALL	\$ 975	\$ 1029	\$ 1109
486-33/64K exp up to 256 cache	\$ 400	\$ 580	\$1550	\$ 1247	\$ 1287	\$ 1366
486-50/64K exp up to 256 cache	\$ 600	\$ 763	\$1700	\$ 1386	\$ 1435	\$ 1514
486-66/64K	\$ 670	\$ 830	\$1750	\$ 1445	\$ 1495	\$ 1544
486-50EISA	\$ 730	\$ 900	\$1950	\$ 1554	\$ 1584	\$ 1643

NEW HARD DRIVES

40mb/18ms (IDE)	\$150
80mb/18ms (IDE) Maxtor	178
120mb (IDE)	220
120mb/18ms (IDE) Conner	230
130mb/15ms (IDE) Maxtor	235
170mb/18ms (IDE)	290
200mb (IDE)	317
200mb (IDE) Maxtor	330
200mb/116ms (SCSI)	400
240mb/15ms (IDE) Quantum	430
340mb/15ms (IDE) Maxtor	562
540mb/12ms (IDE)	830
676mb/16ms (IDE)	1020

MULTIMEDIA

Chicon CD-ROM	\$429
Mitsumi CD ROM w/Card	235
NEC CD-ROM 84M	519
SONY CD-ROM CDU031/541	308/414
Creative Lab. CD ROM Upgrade Kit	447
MEDIAVISION Pro 16 Media System	970
MEDIAVISION ProAudio Spectrum 16	209
MEDIAVISION ProAudio Plus	150
Microsoft DOS 5.0/Windows 3.1	45/45
Microsoft Mouse	60
SoundBlaster Pro w/MIDI Kit	177
SoundBlaster basic	83

RAM & MATH COPROCESSORS

* 4 MB - 70 Simm	\$125
* 4 MB - 80 Simm	120
* 1 MB - 60	35
* 1 MB - 70	30
* 1 MB - 80	29
387SX-20/25	30/35
387DX-33/25/20/16	60/55/45/35

VIDEO CARDS AND MONITORS

Oak VGA-521 (1024x768, 16 bit)	\$42
1M SVGA card (1024x768,256)	50
Trident 1MB (1024x768,256K colors)	65
Video 7102j w/512KB	166
Video 7VRAM II w/1MB	338
Diamond Stealth	196
Diamond Speed Star 24X w/Hi-Color	150
Diamond VESA Local Bus	165
Orchid VLB Fahrenheit	162
Orchi IIs/Fahrenheit 1280 24-bit w/1MB	169
ATI Graphic Vantage w/mouse	215
ATI Graphic Ultra w/mouse	325
Nanao 9080i (16", 1280x1024, 0.28)	890
Nanao F550i (17", 1280x1024, 0.28)	1020
Nanao F560i (17", 1280x1024, 0.28)	1750
NEC 3FGX (15", 1024x768, 0.28)	619
NEC 4FG (15", 1024x768, 0.28)	729
NEC 5FG (17", 1280x1024, 0.31)	1,338
MAG 15F (1280x1024, 0.28)	560
MAG 17F (1280x1024, 0.28)	1,100
Sony CPD 1304s (14", 1024x768, 0.25)	540
Sony CPD 1604s (17", 1024x768, 0.25)	946
HITACHI CM-2085M+ (20")	1320
HITACHI CM-2187M (21")	2185
TOSHIBA P17C01 (17")	1156
TOSHIBA P21CM00 (21")	1790
TAXAN MV875+ (17")	1175
IDEK MF-5217 (17")	975
IDEK MF-5317 (17")	1025
Super VGA (1024x768) Monitor 0.39	210
Super VGA (1024x768) Monitor 0.28	248
Super VGA Non-Interlaced Monitor 0.28	279
Viewsonic 4E/5E/5+	281/381/481
Viewsonic 6E	321
Viewsonic 6FS	581
Viewsonic 7	960
Viewsonic 8	1510

HARD FLOPPY DRIVE ADAPTERS

IDE 2FD/2HD	\$14
IDE 4FD/2HD	35
IDE 2FD/2HD with 2s/1p/1g	18
MFM 2FD/2HD	48
IDE cache controller (promise)	145
Adapted SCSI 1542KB-w/Kit (ISA)	260
Ultrastor SCSI 24F	454
Ultrastor ESDI 22F/22C (EISA)	478/674

KEYBOARDS

101 Enhanced Keyboard	\$21
Maxiswitch	31
Keytronics	36
Focus 2001/5001	38/45
Omnikey 102/Ultra	66/89

MISCELLANEOUS

Internal Modem 2400 Baud	\$34
Fax Modem (9600 Fax, 2400 Modem)	53
Fax Modem 9600 Fax, 9600 Modem	180
Fax Modem 14400 Fax, 14400 Modem	200
3-Button mouse	13
Logitech Mouseman Serial (400dpi)	61
Logitech Mouseman Bus (4000dpi)	65
Colorado Tape Backup DJ-10 120M	175
Colorado Tape Backup DJ-20 250M	226
Baby AT/Mini Tower Case w/230W PS	59
Medium Tower Case 2/230W PS	99
Full Tower Case w/230W PS	105

We only use INTEL CPU for all 486 systems

What you see
is What you
get!

1 Year warranty
on parts & labor

NANAO F550i
\$1025

DIAMOND VLB
STEALTH
\$165

ORCHID VLB
FAHRENHEIT
\$162

210 MB
MAXTOR
\$336

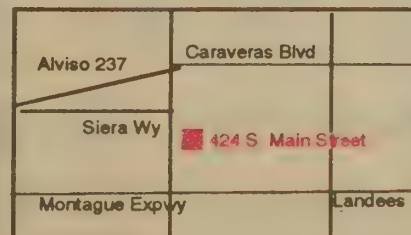
SPECIAL

* Add \$50.00
for VESA Local
Bus Motherboard
*Please call for
Orchid VESA and
Diamond VLB
Motherboard.
* Lowest price for
Netware installa-
tion and configura-
tion. Please call

ART COMPUTER TECH 386
and 486 Are Fully Compatible
with WINDOWS 3.1, MS-DOS,
AUTOCAD, OS/2, Novell,
Banyan, UNIX, SCO and other
software.

* Prices & Availability subject to
change w/o notice
* We accept VISA & Mastercard
* Not responsible for typos
* Price based on cash prices
* Government P.O. accepted
* Company Terms of credit
approval.

424 S. MAIN ST.
MILPITAS, CA 95035
TEL.(408) 946-7852
FAX.(408) 946-7892
BUS. HRS M-F 9:30-6:00
SAT&SUN 11:30- 4:00



THE BEST PRICE IN TOWN!

\$835

486DX2-66 MHz w/128K Cache

- 1 MB Expandable to 32 MB on Board
- 8K Internal Cache
- 128K External Cache Exp. to 256K
- Shadow Ram
- 1.2 or 1.44 MB Floppy Drive
- 1:1 Interleave HD/FD Controller
- Tower or Desktop case w/power supply
- 101 Enhanced Keyboard

Optional for 486 Systems

- VESA Local Bus. Add \$45
EISA Add \$150
Orchid VESA Local Bus Motherboard Add \$195

\$740

486-50 MHz w/64K Cache

Intel 80486 50 MHz CPU

- 1 MB Expandable to 32 MB on board
- 8K Internal Cache
- 64K External Cache exp. to 256K
- Shadow RAM
- 1.2 or 1.44 MB Floppy Drive
- 1:1 Internal HD/FD Controller
- Tower or Desktop case w/power supply
- 101 Enhanced Keyboard

486-33 MHz

w/128K Cache

w/Intel 80486-33MHz CPU . . . \$580

w/Cyrix CPU. \$445

- 1 MB Expandable to 32 MB on board
- 8K Internal Cache
- 128K External Cache exp. to 256K
- Landmark=152
- Shadow RAM
- 1.2 or 1.44 MB Floppy Drive
- 1:1 Internal HD/FD Controller
- Tower or desktop case w/power supply
- 101 Enhanced Keyboard

- TS4000 w/1MB Add \$135
Orchid Fahrenheit VLB 1M Add \$175
IDE 32-Bit Add \$75

OPTIONAL: w/system purchase

- 12" Mono Monitor & Card . . . \$85
- Super VGA Monitor (1024x768 0.39) w/SVGA Card 512K . . . \$255

- Super VGA Monitor (1024x768 0.28) w/SVGA Card 512K . . . \$290
- Non-Interlaced SVGA Monitor (1024x768 .28) w/1MB Card . . . \$345



NOVELL

\$270

386-SX 33 MHz

- 1 MB Expandable to 8 MB
- Shadow RAM
- 1:1 Interleave HD/FD Controller
- 1.2 or 1.44 MB Floppy Drive
- Tower or desktop case w/power supply
- 101 Enhanced Keyboard

\$260

386-SX 25 MHz

- Landmark=36
- 1 MB Expandable to 8 MB
- Shadow RAM
- 1:1 HD/FD Controller
- 1.2 or 1.44 MB Floppy Drive
- Tower or desktop case w/power supply
- 101 Enhanced Keyboard

Sales . . .
Custom Design Service . . .
Installation and Maintenance . . .
Extended Software Support . . .

available through
STEPFORD
(415) 553-3837

\$235

286-20 MHz 0 Wait

- Landmark =21
- 512K Expandable to 4 MB
- Real Time Clock
- 8 Expansion Slots
- 80287 Socket
- 1:1 HD/FD Controller
- 1.2 or 1.44 MB Floppy Drive
- Tower or Desktop case w/power supply
- 101 Enhanced Keyboard

\$220

286-12 MHz 0 Wait

- 6/12 MHz 0 Wait
- 512K Expandable to 4 MB
- C & T Chip Set
- EMS 4.0 Built-In
- Shadow RAM
- Landmark=16
- 1:1 HD/FD Controller
- Real Time clock
- 1.2 or 1.44 MB Floppy Drive
- Tower or desktop case w/power supply
- 101 Enhanced Keyboard

BELMONT SYSTEMS INC.
(Belmont Computer Products)

1555 Industrial Road, San Carlos, CA 94070

(415) 598-9058

FAX (415) 598-0186

STORE HOURS: M-F 9-6

Sat 10-3

PRICE IS NOT ALL WE OFFER:

• BEST QUALITY • STRONGEST SUPPORT STAFF • 6 YEARS BUSINESS EXPERIENCE

\$345

486SX-25 MHz

- 1 MB Expandable to 32 MB on Board
- 8K Internal Cache
- Shadow RAM
- 1.2 or 1.44 MB Floppy Drive
- 1:1 Interleave HD/FD Controller
- 101 Enhanced Keyboard
- Tower or Desktop case w/power supply

\$320

386-40 MHz w/64K Cache

- 1 MB Expandable to 32 MB on Board
- 64K Static Cache Memory
- Shadow RAM
- 1.2 or 1.44 MB Floppy Dr.
- 1:1 Interleave HD/FD Controller
- Socket for 80387
- Tower or desktop case w/power supply
- 101 Enhanced Keyboard

\$315

386-33 MHz 64K Cache

- 1 MB Expandable to 32 MB on Board
- 64K Static Cache Memory
- Landmark=57
- Shadow Ram
- 1.2 or 1.44 MB Floppy Drive
- 1:1 Interleave HD/FD Controller
- Socket for 80387
- Tower or desktop case w/power supply
- 101 Enhanced Keyboard

44 MB 28MS Hard Disk
85 MB 16MS
105 MB 18MS
125 MB 16MS

145
185
220
230
212 MB 16MS
170 MB 16MS
340 MB 15MS
510 MB 12MS

325
265
1515
865

Keyboard

Mitsumi 101 Key	'39
Keytronic 101 Key	.45
Maxiswitch 101 Key	.45
OmniKey 101/102/Ultra	73/73/102

Floppy Drive

TEAC/Epson 1.2 MB.	'55
TEAC/Epson 1.44 MB 3.5"	.55

Hard Disk

Conner 3000 40 MB.	'160
Western Digital 85 MB (18ms)	.200
Conner 85 MB	.200
NEC 105 MB.	.235
Conner 30104 120 MB (18ms)	.250
Western Digital 125 MB.	.250
Maxtor 7120A 130 MB 15ms.	.250
Conner 170 MB.	.280
Western Digital 210 MB.	.350
Maxtor 7213 210 MB	.350
Conner 30204 210 MB.	.350
Maxtor 340 MB.	.610
Conner 3504 510 MB 12ms	.895
Fujitsu 512 MB 12ms.	.895
Fujitsu 670 MB SCSI	CALL

Modem

2400 Baud (Int)	'40
2400 Baud (Ext)	.75
9600 Baud Int. V.32	.180
Fax Modem (9600 FAX, 2400 modem)	.65
14,400 Modem, 14,400 Fax	.215

Interface Card

Mono Graphic Card	'20
VGA Card (16 bit 800x600)	.35
OAK SVGA (1024x768 512K)	.45
Trident VGA w/1 MB RAM.	.65
Orchid Pro Designer II S w/1 MB	.115
Orchid Pro Designer II S w/Sierra Ramdac	.125
Orchid Fahrenheit (1280x1024)	.175
ATI Ultra w/Mouse.	.250
ATI Ultra Pro w/2 MB	.420
Diamond Speedster .24X.	.160
Diamond Stealth.	.205
AT M I/O (2S, 1P, 1G).	.25
1:1 FDC/HDC (MFM).	.65
IDE Card w/cable.	.25
Adaptec SCSI 1542B w/kit.	.265
DTC 3290 SCSI (EISA) w/512K.	.450

Monitor

Hyundai Mono.	'75
14" Flat Screen.	.95
Super VGA (1024x768) 0.39	.225
Super VGA (1024x768) 0.28	.260
Non-Interlaced SVGA Monitor	.300
15" Non-Interlaced Flat Screen.	.445
Sony 1304S.	.560
Sony 1604.	.965
Viewsonic 6.	.345
Viewsonic 6FS	.575
Viewsonic 7	.960
IDEK 5217 17"	.895
Nanao 9080i.	.910
Nanao F550i 17" 1280x1024 .28	.1045
NEC 3FGX/4FGX	.635/735

Motherboard

286 6/12 MHz	'75
286 8/20 MHz	.85
386-SX 25 MHz.	.120
386-SX 33 MHz	.130
386-25 MHz	.165
386-33 MHz 64K Cache	.185
386-40 MHz 64K Cache	.195
486-33 MHz w/64K Cache	.470
486-50 MHz w/64K Cache	.620

Printer

Panasonic KX-P 1180 w/Cable	'155
Panasonic KX-P 1123 w/Cable	.205
Panasonic KX-P 1624 w/Cable	.345
Panasonic 1124i w/Cable	.285

Misc.

287-8/10	'40/40
387-SX	.75
387-25/33/40	.75/85/95
150W (XT) Power Supply	.40
230W Power Supply	.48
Logitech Mouse Man	.65
Logi Trackman Serial/Bus	.85
Microsoft Serial/Bus Mouse	.85
DFI Mouse (3 Button, Micro Soft Compatible)	.25
AT Deluxe Case	.48
Mini Vertical Case w/Power Supply	.65
Mid Tower Case w/Power Supply	.95
Full Tower Case w/Power Supply	.125
Colorado 120 MB Tape Back-Up	.185
Colorado 250 MB Tape Back-Up	.245
RAM DIP/SIPP/SIMM.	CALL

TERMS and CONDITIONS:

- Company, Government P.O.'s Welcome
- UPS Shipping Daily

All prices and contents subject to change w/o notice.
All brand names are registered trademarks
Co. Term on credit approval

Welcome to visit our
4500 Sq. ft. showroom!
Computers, Monitors and
Printers are now
on display!

Located in the
San Carlos Commerce
Center Office Park

San Carlos	
Holly	
American	INDUSTRIAL
Washington	Breuner's Furniture
Whipple	1501
	1561 1555
	Circle Star
Redwood City	

MICRO MARKET PLACE

The Third Conference On Computers, Freedom, And Privacy— CFP'93

March 9–12, 1993

San Francisco Airport Marriott Hotel
Burlingame, CA

The advance of computer and telecommunications technologies holds great promise for individuals and society. From convenience for consumers and efficiency in commerce, to improved public health and safety and increased participation in democratic institutions, these technologies can fundamentally transform our lives.

At the same time, these technologies pose threats to the ideals of a free and open society. Personal privacy is increasingly at risk from invasion by high-tech surveillance and eavesdropping. The myriad databases containing personal information maintained in the public and private sectors expose private life to constant scrutiny.

Technological advances also enable new forms of illegal activity, posing new problems for legal and law enforcement officials and challenging the very definitions of crime and civil liberties. But technologies used to combat these crimes can pose new threats to freedom and privacy.

Even such fundamental notions as speech, assembly, and property are being transformed by these technologies, throwing into question the basic Constitutional protections that have guarded them. Similarly, information knows no borders; as the scope of economies becomes global and as networked communities transcend international boundaries, ways must be found to reconcile competing political, social, and economic interests in the digital domain.

The Third Conference on Computers, Freedom, and Privacy will assemble experts, advocates, and interested people from a broad spectrum of disciplines and backgrounds in a balanced public forum to address the impact of computer and telecommunications technologies on freedom and privacy in society. Participants will include people from the fields of computer science, law, business, research, information, library science, health, public policy, government, law enforcement, public advocacy, and many others.

CFP'93 registration will be limited to 550 attendees, so we advise you to register as early as possible and take advantage of the early registration discounts.

REGISTRATION FEES ARE:

If mailed by:	7 February	8 March	on site
Conference Fees:	\$300	\$355	\$405
Tutorial Fees:	\$135	\$165	\$195
Conference & Tutorial	\$435	\$520	\$600

For registration and other information, contact Bruce Koball, General Chair, CFP'93, 2210 Sixth Street, Berkeley, CA 94710. Phone: (510)845-1350. Fax: (510)845-3946. Internet mail: cfp93@well.sf.ca.us

Sponsored by: Association for Computing Machinery, Special Interest Groups on Communications (SIGCOMM), Computers and Society (SIGCAS), Security, Audit, and Control (SIGSAC)

COSPONSORS AND COOPERATING ORGANIZATIONS:

American Civil Liberties Union
American Library Association
Asociacion de Technicos de Informatica

Commission for Liberties and Informatics
Computer Professionals for Social Responsibility
Electronic Frontier Foundation
Freedom to Read Foundation
IEEE Computer Society
IEEE-USA Committee on Communications and Information Policy
Internet Society
Library and Information Technology Association
Privacy International
USD Center for Public Interest Law
U.S. Privacy Council
The WELL (Whole Earth 'Electronic Link)

PATRONS AND SUPPORTERS (AS OF 24 DECEMBER 1992):

American Express Corp.
Apple Computer, Inc.
Dun & Bradstreet Corp.
Equifax, Inc.
Information Resource Service Company
Mead Data Central, Inc.
National Science Foundation (pending)
RSA Data Security, Inc.

PRE-CONFERENCE TUTORIALS:

On Tuesday March 9, the day before the formal conference begins, CFP'93 is offering a number of in-depth tutorials on a wide variety of subjects on four parallel tracks. These presentations will range from interesting and informative to thought-provoking and controversial. The tutorials are available at a nominal additional registration cost.

MORNING TUTORIALS

INFORMATION USE IN THE PRIVATE SECTOR

Jack Reed, Information Resource Service Company
Diane Terry, TransUnion Corp.
Dan Jones, D.Y. Jones & Assoc.

This tutorial will deal with the use of personal information from the point of view of some private sector information vendors and users. It will include a discussion of the Fair Credit Reporting Act and the "Permissible Purposes" for obtaining a consumer credit report. Information used for purposes outside the FCRA will be discussed in relationship to privacy and societal needs for businesses and individuals.

ACCESS TO GOVERNMENT INFORMATION

James Love, Director, Taxpayer Assets Project

This tutorial will examine a wide range of problems concerning citizen access to government information, including how to ask for and receive information under the federal Freedom of Information Act, what types of information government agencies store on computers, what the barriers are to citizen access to these information resources, and how citizens can change government information policy to expand access to taxpayer-funded information resources.

EXCELLENCE IN SERVICE

WE TAKE THE TIME TO LISTEN TO YOUR NEEDS

5 YEAR LABOR WARRANTY

LIFETIME TECHNICAL SUPPORT

Our Services Include:

- **FREE** Needs Analysis
- **FREE** Installation of Software on System purchase
- **FREE** 1 hour data transfer from your existing computer
- **Lifetime** technical support
- **5 Year** Labor, 1 Year Parts Warranty
- **Complete** Turnkey Solutions
- **On-Site** Service Available

486-DX33/50/66 MHz 120MB Hard Drive Super VGA Systems

- 64K Cache
- 4MB RAM
- 120MB Hard Drive
- SVGA Monitor, .28 dot pitch
- SVGA Card w/ 1MB
- 1.2 & 1.44 Teac Floppy Drives
- 2 Serial, 1 Parallel, & 1 Game ports
- Mid Tower case
- Enhanced 101 Keyboard
- MS DOS 5.0

\$1595/\$1775/\$1875

386-DX33/40 MHz 120MB Hard Drive Super VGA Systems

- 64K Cache
- 4MB RAM
- 120MB Hard Drive
- SVGA Monitor, .28 dot pitch
- SVGA Card w/ 1MB
- 1.2 & 1.44 Teac Floppy Drives
- 2 Serial, 1 Parallel, & 1 Game ports
- Mid Tower case
- Enhanced 101 Keyboard
- MS DOS 5.0

\$1250

AST Bravo 386/SX33

Model 123B, Including

- 4MB RAM, SVGA
- 120MB Hard Drive, DOS, Etc.

14" Non-Interlaced Monitor Included

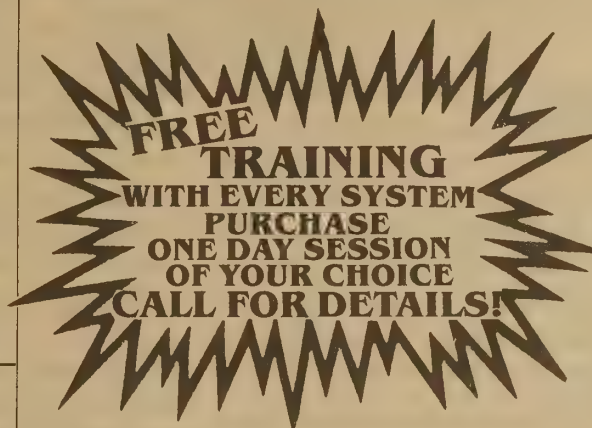
\$1445

All Models Available
• Call for Pricing

COMPAQ

Prolinea 3/25s

- 2MB RAM, SVGA
 - 120MB Hard Drive, DOS, Etc.
- \$1065** All Models Available
• CALL for Pricing!



REALTORS® SPECIAL

Recommended by East Bay Regional Data Center customer support staff. This system is guaranteed to work with the BORIS® Program

SYSTEM INCLUDES

- Motherboard and CPU
- 4 MB RAM
- 120 MB Hard Drive
- Super VGA Monitor 1024x768 .28dp
- SVGA Card w/ 512K
- 1.2 & 1.44 Floppy Drives
- MS DOS 5.0
- MS Windows 3.1
- Internal 9600 B Modem
- Mid Tower Case
- Enhanced 101 Keyboard

386DX-33 486DX-33 486DX-50

\$1545/\$1890/\$2075

Micronics VESA Local Bus True VESA Compatibility 486/DX33

- Local Bus IDE C/C
- 4MB RAM
- 120MB Hard Drive
- ET/4000 Local Bus Video w/ 1MB
- Teac 1.2 & 1.44 MB Floppy Drives
- Samsung 14" Non-Interlaced Monitor
- Keytronic Enhanced 101 Keyboard
- Mid Tower Case
- MS-DOS 5.0 (S/W & Manuals)
- MS Win 3.1 (S/W & Manuals)

\$2245

UNIX BASED

Multi-User System

AMI 486-50 EISA

- Motherboard includes special heat sink for heat dissipation
- 128K Direct Mapped, Write through External Cache
- 8K Internal Cache
- 8 MB RAM expandable to 96 MB on board
- 32 Bit SCSI-2 Host adapter w/ 4MB Cache
- 200 MB Fast SCSI Hard Drive
- Intelligent Multiuser Board for 8 users (upgradable to 128 users in minutes without performance degradation)
- 1.2 & 1.44 MB Teac Floppy Drives
- Tower Case w/ multiple cooling fans
- Enhanced 101 Keyboard
- SCO Operating Systems V3.2.4 (unlimited users)
- SCO TCP/IP V1.1.3 (unlimited users)
- **Designed & Produced in the USA**



\$5495

Options include:

Disk Array Systems Mirroring & Duplexing Systems, Backup System.

Call for Additional Options and Pricing

We Carry Name Brands Including:

3Com®

AST
RESEARCH INC.

EVEREX

Canon

SAMSUNG

MITSUBISHI
ELECTRONICS

TOSHIBA

intel®

ZENITH
data systems
Groups Bull

NEC

MEGA
Makers of the Bermuda Bus

Acer

COMPAQ

ALR

ALPS
AMERICA

Panasonic

EPSON®

HEWLETT
PACKARD

Hayes®

CITIZEN

OKIDATA

AMI

ORCHID

Systems Unlimited

1554 Newell Avenue, Walnut Creek, CA 94596

(510) 906-1690

Fax (510) 906-1699



HOURS:
MON-FRI: 9-6
SAT: 11-4

CLOSED LAST SATURDAY OF THE MONTH
PRICES SUBJECT TO CHANGE W/O NOTICE



EXPLORING THE INTERNET—A GUIDED JOURNEY

Mark Graham, Pandora Systems

Tim Pozar, Late Night Software

This tutorial will give participants a practical introduction to the most popular and powerful applications available via the world's largest computer network, the Internet. There will be hands-on demonstrations of communications tools such as email, conferencing, Internet Relay Chat, and resource discovery and navigation aids such as Gopher, WAIS, Archie, and World Wide Web. Extensive documentation will be provided.

CONSTITUTIONAL LAW FOR NON-LAWYERS (1/2 SESSION)

Mike Godwin, Staff Counsel, Electronic Frontier Foundation

This tutorial is designed to inform non-lawyers about the Constitutional issues that underlie computer-crime and computer civil-liberties cases. The tutorial focuses on the First and Fourth Amendments, but includes a discussion of the Fifth Amendment and its possible connection to the compelled disclosure of cryptographic keys. It also includes a discussion of the appropriateness of "original intent" as a method for applying the Constitution in the modern era.

CIVIL LIBERTIES IMPLICATIONS OF COMPUTER SEARCHES & SEIZURES (1/2 SESSION)

Mike Godwin, Staff Counsel, Electronic Frontier Foundation

This tutorial assumes only a very basic knowledge of Constitutional law (the prior tutorial provides an adequate background), and outlines how searches and seizures of computers may raise issues of First and Fourth Amendment rights, as well as of federal statutory protections. It includes a discussion of what proper search-and-seizure techniques in such cases may be.

AFTERNOON TUTORIALS

PRACTICAL DATA INFERENCING: WHAT WE THINK WE KNOW ABOUT YOU

Russell L. Brand, Senior Computer Scientist, Reasoning Systems

What do your transaction trails reveal about you? Are you a good risk to insure? Are you worth kidnapping, auditing, or suing? Which products should I target at you? Are you a member of one of those groups that I would want to harass or discriminate against? This tutorial will be a hands-on approach to digging for data and to piecing it back together. Time will be divided between malicious personal invasions and sweeping searches that seek only profit, followed by a brief discussion about improper inferences and their practical impact on innocent files and lives. Legal and moral issues will not be addressed.

TELECOMMUNICATIONS FRAUD

Donald P. Delaney, Senior Investigator, New York State Police

Illegal call sell operations in New York City are estimated to be a billion-dollar industry. This tutorial will provide an overview of the problem, from finger hacking to pay phone enterprises, and will include an up-to-date assessment of the computer cracker/hacker/phone phreak impact on telephone company customer losses. Also discussed will be unlawful access of telephone company switches; unlawful wiretapping and monitoring; cards, codes, and 950 numbers; New York State law and police enforcement; methods of investigation; and case studies.

PRIVATE SECTOR MARKETPLACE AND WORKPLACE PRIVACY

Ernest A. Kallman, Bentley College

H. Jeff Smith, Georgetown University

This tutorial will give participants a general overview of privacy issues affecting uses of personal information (e.g., medical information,

financial information, purchase histories) in the marketplace as well as privacy concerns in the workplace (e.g., privacy of electronic and voice mail, work monitoring). The tutorial will also set the boundaries for privacy arguments in the middle and latter 1990s.

SYSLAW

Lance Rose, Attorney and Author, SysLaw

The SysLaw tutorial session will explore in-depth the freedom and privacy issues encountered by computer bulletin boards (BBS), their system operators, and their users. BBSes are estimated to number over 45,000 today (not counting corporate systems), and range from small, spare-time hobby systems to systems with thousands of users, grossing millions of dollars. BBSes are a grassroots movement with an entry cost of \$1000 or less, and the primary vehicles for new forms of electronic communities and services. Subjects covered will include: First Amendment protection for the BBS as publisher/distributor; data freedom and property rights on the BBS; how far can sysops control BBS user activities?; and user privacy on BBSes today.

Note: Tutorial presenters will offer expert opinions and information. Some may advocate particular viewpoints and thus may put their own "spin" on the issues. Caveat Listener.

CONFERENCE RECEPTION:

Following the Tutorials on Tuesday evening, you are invited to meet new and old friends and colleagues at an opening reception.

SINGLE TRACK MAIN PROGRAM:

The technological revolution that is driving change in our society has many facets and we are often unaware of the way they all fit together, especially the parts that lie outside of our own expertise and interest. The primary goal of CFP'93 is to bring together individuals from disparate disciplines and backgrounds, and engage them in a balanced discussion of all CFP issues. To this end our main program, starting on Wednesday March 10, is on a single track enabling our attendees to take part in all sessions.

EFF PIONEER AWARDS

All conference attendees are invited to the Awards Reception sponsored by the Electronic Frontier Foundation (EFF) on Wednesday evening, March 10. These, the second annual EFF Pioneer Awards, will be given to individuals and organizations that have made distinguished contributions to the human and technological realms touched by computer-based communications.

BIRDS OF A FEATHER SESSIONS:

CFP'93 will provide a limited number of meeting rooms to interested individuals for special Birds of a Feather sessions after the formal program each evening. These sessions will provide an opportunity for special interest discussions that were not included in the formal program and will be listed in the conference materials.

CFP'93 Main Program Sessions:

WEDNESDAY MARCH 10

ELECTRONIC DEMOCRACY

Chair—Jim Warren, MicroTimes and Autodesk, Inc.

The effects of computer and telecommunications technologies on democratic processes and institutions are increasing dramatically. This session will explore their impacts on political organizing, campaigning, access to representatives and agencies, and access to government information that is essential for a free press and an informed electorate.

--Since 1986

The Super Link

MON-FRI: 9AM - 6AM
CREDIT CARDS WELCOME

1257A Tasman Dr. Sunnyvale, CA 94089 TEL:408-745-1606 FAX:408-745-1609

Micronics VL-BUS SYSTEM

- * 4MB-70NS, exp to 64MB
- * 256K Cache
- * Maxtor 130MB HDD
- * Teac 1.2 & 1.44 MB FDD
- * Micronics VL-Bus IDE Cont.
- * Diamond Stealth VLB w/ 1 MB Video Card
- * Viewsonic 486-33...\$1895
- * 6E Monitor 486-50...\$2025
- * Fujitsu 4850 DX2-50...\$1995
- * Keyboard DX2-66...\$2135
- * 2 Serial / Parallel
- * Dual Fan Mid Tower Case
- * 230W UL Power

MOTHERBOARD

VESA Local Bus Board

Micronics: w/CPU

- 486-33 /256K\$729
- 486-50 /256K\$890
- 486-DX2-66 /256K...\$990

Orchid: w/CPU

- 486-33 /256K\$585
- 486-50 /256K\$775
- 486-dx2-66 /256k ...\$860

MicroStar: no CPU

- 486-33 /128K\$125

- EISA 486-50/33 /256K no CPU...\$259
- ISA 486-50 /33/128K no CPU...\$110
- 486SX-25 w/CPU\$225
- 386 SX-33 w/CPU\$99
- 386SX-25 w/CPU\$95

Special

Cooling Fan

**** \$19 ** Only**

SPECIAL

EPSON 386SX-16

- * 386SX-16MHz
- * 2 MB
- * 1.2 MB
- * IDE Cont.
- * Serial / Parallel
- * EPSON Keyboard
- * EPSON Case & Power

\$275

Options See

Video

Hard Disk

Floppy Drive

Modem

We have Benchmark
test result on 486
VESA Orchid Main Board
Performance. etc...
Call for Detail

ORCHID VL-BUS SYSTEM

- * 4MB-70NS, exp to 64MB
- * 256K Cache
- * Teac 1.2 & 1.44MB FDD
- * Maxtor 130MB HDD
- * Orchid VL-Bus IDE Cont.
- * Orchid VL-Bus
- * SVGA Card 486-33...\$1860
- * Viewsonic 486-50...\$2020
- * 6E Monitor DX2-50...\$1990
- * 2 Serial / Parallel DX2-66...\$2105
- * Fujitsu 4850 Keyboard
- * Dual Fan Mid Tower Case
- * 230W Power

VIDEO CARD

VESA Local Bus

- Orchid\$179
- Diamond Stealth...\$179
- Genoa\$125
- ATI w/ 2MB\$425

ATI Ultra Graphic /1MB

- w /Mouse\$269

- Diamond Stealth w/ 1MB ..\$199
- Diamond Speed Star 24X ..\$179
- Orchid Fahrenheit w/1MB...\$189
- TSENG SVGA 1MB 256/64K..\$82/89
- Trident SVGAw/1MB.....\$59
- Trident SVGA w/512K.....\$42
- VGA w/256K\$29
- MGP w/ Printer Port\$15

CASE

- Dual Fan Full Tower 230W UL...\$155
- 300W UL...\$179
- Dual Fan Mid Tower 230W UL...\$120
- 10 Bay Full Tower 230/300W...\$109
- 8 Bay Full Tower 230/300W...\$99
- 8 Bay Mid Tower 230W.....\$75
- 5 Bay Mini Tower 200W.....\$55

POWER SUPPLY

- 300W UL for Tower...\$69
- 250W UL.....\$59
- 230W UL.....\$49
- 230W UL PS-2.....\$45
- 200W UL XT Size.....\$45

BLK CASE, KB, & MOUSE

- Black Full Tower 230W.....\$135
- Mid Tower 230W.....\$119
- Mini Tower 200W....\$77
- Black Keyboard 121 Soft ...\$41
- 191 click ...\$44
- 5100 Small....\$39
- Black Mouse\$17
- Black Monitor 1024x768 .28dp
- Interlace\ Non-Interlace ... \$295/325

KEYBOARD

- Omni Ultra.....\$95
- Omni 101 /102.....\$65
- Fujitsu 4700/4850.....\$45/32
- Keytronics 101.....\$37
- Maxi 101.....\$33
- BTC 5339SX 101.....\$23
- BTC 5100 Small Size....\$36

Prices are subject to change
without notice
Freight and labor are not
refundable including reject.

TSL BASIC SYSTEM

** Items included **

- * 4MB-70NS 486DX2-66 /128K Cache\$1229
- * Teac 1.2MB 486DX2-50 /128K Cache\$1079
- * Teac 1.44MB 486DX-50 /128K Cache\$1119
- * Maxtor 130MB HDD 486DX-33 /128K Cache\$949
- * IDE 2F/2H Controller 486SX-25\$729
- * 2 Serial / Parallel / Game 386DX-40 /128K Cache\$679
- * Mini Tower Case 386SX-33\$619
- * 200W Power 386SX-25\$599

Options See Below Item

MONITOR

- Viewsonic 7E\$979
- 6FS\$545
- 6E\$345
- 5+\$495
- 5E\$395
- 4E\$295
- Addonics NI 1024x768 0.28dp...\$315
- Addonics 1024x7680.28dp.....\$265
- Morse 17" 1240x1024 0.26dp...\$875

CONTROLLER

- IDE 4F/2H/2S/P.....\$39
- IDE 4F/2H.....\$32
- IDE 2F/2H/2S/P/G.....\$17
- IDE 2F/2H\$12
- DTC 3280 SCSI.....\$98
- DTC 3280 4FDD Software...\$49
- J-D VLB IDE Cont\$59

I/O CARD

- 2S/P/G.....\$15
- 2S/2P.....\$22
- 2P.....\$17
- Serial.....\$10
- Printer\$9

MODEM

- 2400/9400 Fax /Modem.....\$59
- 2400/9600 Fax/Modem Pocket...\$119

MOUSE & TRACKBALL

- Easy Mouse\$12
- Logitech First Mouse\$37
- Logitech Serial Mouse ...\$55
- Logitech Bus Mouse\$65
- Logitech Trackman\$75

CD ROM

- Sony CD-ROM 31A\$269
- Panasonic CD-ROM w/CBL.....\$279
- Fusion Multi Media Kit
with NEC EXT. CD.....\$395

ACCESSORY

- Cable (M/M, M/F, F/F)
6', 10', 15', 25' 50'
- Dust Cover for All Tower Cases
- Cable Extension(Monitor, Keyboard,
& 15' VGA Cable)
- Monitor Filter, Diskette Box,
- PS2 adaptor, Mouse Pad,
Keyboard Drawer

HARD DISK

IDE:

- 80MB\$190
- 105MB\$215
- 130MB\$230
- 200MB\$340
- 340MB\$570

FLOPPY DRIVE

- Teac 1.2 MB.....\$52
- Teac 1.44 MB\$44
- Mounting Kit\$4

TAPE BACKUP

- Colorado 120MB (DT-10) ...\$189
- 250MB (DJ-20) ...\$249
- Tape\$19

PRINTER

- Canon BJ - 5.....\$195
- Panasonic KX-2123.....\$189
- KX-1124i.....\$209
- KX-1123.....\$165
- 2nd Inventory 2yr warranty

RAM SIMM

- 1MB-70N.....\$32
- 1MB-60N.....\$34
- 4MB-70N.....\$125
- 4MB-60N.....\$135

386 - 486 BOARD

****Motherboard For****

- 386DX - 33
- 386DX - 40
- 486SX - 25
- 486DX - 33
- 486DX - 50
- 486DX2-50
- 486DX2-66

w/ 256K Cache

\$159

Our systems are with

Intel inside

The Best Customer Service In The Bay Area!!!

MD
Technology, Inc.

Highest Quality . Fastest Services . Best Prices
@ 5 Years Labor , 1 Year Parts Warranty @
OPTimum Performance! Excellent Technical Support!

TCI
System

486

386
Complete
SYSTEM

MSDOS 5.0
MICROSOFT MOUSE
MS WINDOWS 3.1
INCLUDED

S3 LCB 486DX-50

- 80486DX- CPU w/256K Cache
- 04 MB Ram Inst. Exp. to 32MB
- Built-in Clock & Calendar
- Weitek Co-processor Socket
- Video & Bios Shadowing
- IDE 2HD/2FD Cont.
- Teac 1.2Mb & 1.44Mb
- 213MB IDE 15MS HD
- 2S , 1P , 1 Game Ports
- S3 LOCAL BUS W/1MB
- 14" 0.28dp SVGA MONITOR
- 101 Enhanced Keyboard
- BABY AT CASE W/PS
- 72HRS Burn-In & Testing

Professional Package
ONLY
\$ 1,995.00

EISA 486DX

- 80486DX- CPU w/256K Cache
- 04 MB Ram Inst. Exp. to 32MB
- Built-in Clock & Calendar
- Weitek Co-processor Socket
- Video & Bios Shadowing
- IDE 2HD/2FD CONT.
- Teac 1.2Mb & 1.44Mb
- 213Mb IDE 15MS HD
- 2S , 1P , 1 Game Ports
- 16 Bit SVGA Card w/1MB
- 14" . SVGA 0.28DP 1024x768
- 101 Enhanced Keyboard
- Baby AT Case w/230W P.S.
- 72HRS Burn-In & Testing

File Server Package
EISA 33MHZ \$ 2,035.00
EISA 50MHZ \$ 1,845.00

486DX SYSTEM

- 80486DX- CPU w/64K Cache
- 04 MB Ram Inst. Exp. to 32MB
- Built-in Clock & Calendar
- Weitek Co-processor Socket
- Video & Bios Shadowing
- 1:1 IDE 2HD/2FD Cont.
- Teac 1.2Mb & 1.44Mb
- 213Mb IDE Harddrive
- 2S , 1P , 1 Game Ports
- 16 Bit SVGA Card w/1MB
- 14" SVGA 0.28dp 1024x768
- 101 Enhanced Keyboard
- Baby AT Case w/200W P.S.
- 72HRS Burn-In & Testing

Executive Package
DX- 33MHZ \$ 1,618.00
DX- 50MHZ \$ 1,818.00
Free 2400B Modem!

386DX SYSTEM

- 80386DX- CPU w/64K Cache
- 04 MB Ram Inst. Exp. to 32MB
- Built-in Clock & Calendar
- Math Co-processor Socket
- Video & Bios Shadowing
- 1:1 IDE 2HD/2FD Cont.
- Teac 1.2Mb & 1.44Mb
- 213MB IDE 15MS HD
- 2S , 1P , 1 Game Ports
- 16 Bit SVGA Card w/1MB
- 14" SVGA Monitor 1024x768
- 101 Enhanced Keyboard
- Baby AT Case w/200W P.S.
- 72HRS Burn-In & Testing

Office Package
DX- 25MHZ \$ 1329.00
DX- 33MHZ \$ 1349.00
DX- 40MHZ \$ 1359.00

FINANCING AVAILABLE ! 30 DAYS MONEY BACK GUARANTEED !

486DX2-66MHZ
Power Package

- 80486DX2 CPU w/256K Cache
- 04 MB Ram Inst. Exp. to 32MB
- Built-In Clock & Calendar
- Weitek Co-processor Socket
- Video & Bios Shadowing
- 1:1 IDE 2HD/2FD Cont.
- Teac 1.2Mb & 1.44Mb
- 213Mb IDE Harddrive
- 2S , 1P , 1 Game Ports
- 16BIT SVGA W/1MB
- 14" 0.28DP SVGA MONITOR
- 101 Enhanced Keyboard
- BABY AT CASE W/PS
- 72HRS Burn-In & Testing

only \$ 1,935.00
Free Modem 2400B!

NOTEBOOK
COMPUTERS

486DX-33/4MB/120MBHD

\$ \$ 2,250.00 \$ \$

486DX-33/4MB/80MBHD

\$ \$ 2,050.00 \$ \$

386SL-25MHZ/64KC/4MB/120MBHD

\$ \$ 1,875.00 \$ \$

386SX-25MHZ/2MB/60MBHD

\$ \$ 1,250.00 \$ \$

Please Call For Details!
All Accessories Available!

BASIC SYSTEM CONFIGURATION

- Motherboard and CPU
- 01 Meg Memory Installed
- 1:1 IDE 2HD/2FD Controller
- Teac 1.2MB or 1.44MB FD
- 2S , 1P , 1 Game Ports

- Built-in Clock & Calendar
- Math Co-processor Socket
- Bios & Video Shadowing
- 101 Enhanced Keyboard
- Baby AT Case w/200W P.S.

OPTimum BASIC System

BASIC 486DX2-66MHZ/64K CACHE	\$ 885.00
BASIC 486DX2-50MHZ/64K CACHE	\$ 755.00
BASIC 486DX50MHZ/64K CACHE	\$ 815.00
BASIC 486DX33MHZ/64K CACHE	\$ 625.00
BASIC 486DX25MHZ/64K CACHE	\$ CALL
BASIC 486SX25MHZ/64K CACHE	\$ CALL
BASIC 386DX40MHZ/64K CACHE	\$ 365.00
BASIC 386DX33MHZ/64K CACHE	\$ 350.00
BASIC 386DX25MHZ	\$ 325.00
BASIC 386SX33MHZ	\$ 287.00
BASIC 386SX25MHZ	\$ 280.00
BASIC 386SX16MHZ	\$ CALL

Please Call for Current market CPU & MEMORY Prices!

Motherboard & CPU

386SX16MHZ	\$ 95
386SX25MHZ	\$ 120
386SX33MHZ	\$ 125
386DX25MHZ Optl	\$ 145
386DX33MHZ w/64K Optl	\$ 190
386DX40MHZ w/64K Optl	\$ 195
486DX33MHZ w/64K Optl	\$ 487
486DX33MHZ w/64K Optl EISA	\$ 805
486DX50MHZ w/64K Optl	\$ 750
486DX50MHZ w/64K Optl EISA	\$ 1340
486DX2-50MHZ w/64K Optl	\$ 625
486DX2-66MHZ w/64K Optl	\$ 905

Please Call for Updated Prices!

PRINTERS

STAR 9Pins Dot Matrix	\$ 140
STAR 24Pins Dot Matrix	\$ 265
STAR 24Pins Color DM	\$ 305
HP Lazer IIP PLUS	\$ 775
HP Lazer IIP	\$ 995
HP Lazer Series III	\$ 1445
HP Lazer IIID	\$ 2395
HP Lazer III SI	\$ 3495
HP Deskjet 500	\$ 395
HP Deskjet 500C	\$ 679

Harddisk & Floppy Drives

IDE 42MB	\$ 165
IDE 52MB	\$ 198
IDE 80MB 18MS	\$ 220
IDE 105MB 18MS	\$ 240
IDE 120MB 18MS	\$ 265
IDE 170MB 15MS	\$ 325
IDE 213MB 15MS	\$ 355
IDE 240MB 15MS	\$ 488
IDE 340MB 15MS	\$ 698
IDE 510MB 13MS	\$ 945
IDE 540MB 12MS	\$ 985
SCSI 1.2GB	\$ CALL
SCSI 1.7GB	\$ CALL
FD Teac 1.2MB	\$ 54
FD Teac 1.44MB	\$ 54

HD/FL Controller

IDE 2HD/2FD Controller	\$ 14
IDE 2HD/4FD Controller	\$ 34
IDE 2HD/2FD with 2S,1P,1G	\$ 23
ADAPTEC 1542B SCSI	\$ 260
Ultrastore 12F ESDI w/Cache	\$ 168
Ultrastore 24F SCSI EISA	\$ 457
DTC SCSI Controller	\$ 115
AT I/O 2S,1P,1G Ports	\$ 15
Serial card or Parallel	\$ 10

Monitors

14" IMP SVGA 1024X768 .39	\$ 225
14" IMP SVGA 1024X768 .28	\$ 265
14" MM SVGA 1024X768 .39	\$ 245
14" MM SVGA 1024X768 .28	\$ 275
14" CLUB AT 1024X768 .28	\$ 340
14" CLUB AT 1024X768 NI .28	\$ 380
14" SONY 1304S	\$ 550
14" SONY 1604S	\$ 990
15" NEC 3FGX	\$ 635
17" NEC 4FG	\$ 745
19" NEC 5FG	\$ 1338
21" NEC 6FGX	\$ 2760

Video Cards

MGP Card	\$ 15
SVGA Card w/512K	\$ 36
Trident SVGA w/1024K	\$ 56
Tsenglab SVGA w/1024k	\$ 79
Diamond Speedstar Plus W/1MB	\$ 125
Diamond Speedstar HiColor w/1MB	\$ 145
Diamond Stealth VRam w/1MB	\$ 208
Orchid Pro IIs Hi Color w/1MB	\$ 133
Orchid Pro Fahrenheit w/1MB	\$ 199

Modem

Modem 2400B Internal	\$ 34
Modem 9600B v.32/v.42Bis	\$ 289
Modem 2400 & Fax 9600 Int.	\$ 69
Modem 9600 & Fax 9600 V.32/42	\$ 345

Mouse & Keyboards

Logitech 1st Mouse	\$ 37
Mouseman Bus	\$ 64
Mouseman Serial PS2/Combo	\$ 65
Scanman 256	\$ 259
Scanman 256 w/OCR Software	\$ 299
Microsoft Bus	\$ 85
Microsoft Serial	\$ 65
BTC 101 Keyboard	\$ 20
MNP 101 Keyboard	\$ 45
Maxswitch 101 Keyboard	\$ 45

Case & Power Supply

Baby Desktop w/200W PS	\$ 55
Baby Tower w/200W PS	\$ 65
Medium Tower w/230W PS	\$ 95
Full Tower w/230W PS	\$ 120
Max Tower w/250W PS	\$ 325
Super Tower w/275W PS	\$ 495

Please Call for Other Items Not Listed!

Micro Data Technology, Inc.

115 N.4Th Street , Ste 112 , SanJose , CA 95112

TEL : (408) 971 - 3618 FAX : (408) 971 - 0650

Tower Computer , Inc.

1373 S. Bascom Ave. , San Jose , CA 95128

TEL : (408) 288 - 6937 FAX : (408) 288 - 7120

Prices Reflect Cash or COD Prices, Company, Gov't, Universities PO Accepted!

Price Subject To Change Without Notice ! Not Responsible For Typos
Dealers Inquiries Welcome

BUSINESS HOURS : MONDAY - SATURDAY : 09:30AM TO 07:00PM SUNDAY CLOSED

ELECTRONIC VOTING—THREATS TO DEMOCRACY

Chair—Rebecca Mercuri, University of Pennsylvania

This panel session will invite representatives covering a broad spectrum of involvement with the controversial subject of electronic vote tallying to address such issues as: Is a secure and reliable electronic voting system feasible? What threats to these systems are identifiable? Should electronic voting systems be open for thorough examination? Can auditability be assured in an anonymous ballot setting? Can voting by phone be practical and confidential? Did Congress exempt voting machines from the Computer Security Act?

CENSORSHIP AND FREE SPEECH ON THE NETWORKS

Chair—Barbara Simons, IBM

As online forums become increasingly pervasive, the notion of "community standards" becomes harder to pin down. Networks and BBSes will link—or create—diverse, non-geographic communities with differing standards, laws, customs, and mores. What may be frank discussion in one forum may be obscenity or defamation or sexual harassment in another. This session will explore the questions of what kinds of freedom-of-speech problems face us on the Net and what kinds of legal and social solutions we need.

PORTRAIT OF THE ARTIST ON THE NET

Chair—Anna Couey, Arts Wire

Computer forums and networks make possible both new artforms and new ways of remote collaboration and exhibition. The growth of the Net creates opportunities for the blossoming of dynamic and interactive artforms and of artistic cultures—provided that networks become widely accessible and remain open to artistic expression without political interference. This session will examine the potentials and the problems of art and artists on the Net.

THURSDAY MARCH 11

DIGITAL TELEPHONY AND CRYPTO POLICY

Chair—John Podesta, Podesta and Associates

The increasingly digital nature of telecommunications potentially threatens the ability of law enforcement agencies to intercept them when legally authorized to do so. In addition, the potential widespread use of cryptography may render the ability to intercept a communication moot. This session will examine these issues and the proposals that have been put before Congress by law enforcement agencies to address these perceived problems.

HEALTH RECORDS AND CONFIDENTIALITY

Chair—Janlori Goldman, American Civil Liberties Union

As the new Administration and Congress consider proposals to reform the United States health care system, it is imperative that confidentiality and security safeguards be put in place to protect personal information. Currently, no comprehensive legislation exists on the confidentiality of health information. This session will explore the current and potential uses of health care information, and proposals to safeguard the information.

THE MANY FACES OF PRIVACY

Chair—Willis Ware, Rand Corp.

Privacy at any cost is foolish, unwise and an untenable position, and privacy at zero cost is a myth. This two-part session will explore the balancing act between the two extremes and the costs and benefits that accrue. The first part will present several examples of systems and applications in the public and private sectors that stake out a position in this continuum. The second part will be a panel discussion exploring the issues raised by the examples previously presented.

THE DIGITAL INDIVIDUAL

Chair—Max Nelson-Kilger, San Jose State University

We are all represented by personal records in countless databases. As these records are accumulated, disseminated and coalesced, each of us is shadowed by an ever larger and more detailed data alter-ego, which increasingly stands in for us in many situations without our permission or even awareness. How does this happen? How does it affect us? How will it develop in the future? What can we do? This session will investigate these questions.

FRIDAY MARCH 12

GENDER ISSUES IN COMPUTING AND TELECOMMUNICATIONS

Chair—Judi Clark, Bay Area Women in Telecommunications

Online environments are largely determined by the viewpoints of their users and programmers, still predominantly white men. This panel will discuss issues of freedom and privacy that tend to affect women—such as access, identity, harassment, pornography, and online behavior—and provide recommendations for gender equity policies to bulletin board operators and system administrators.

THE HAND THAT WIELDS THE GAVEL

Chair—Don Ingraham, Assistant District Attorney, Alameda County, CA

An inevitable result of the settlement of Cyberspace is the adaptation of the law to its particular effects. In this session a panel of criminal lawyers addresses the fallout from a hypothetical computer virus on the legal responsibilities of system managers and operators. The format will be a simulated court hearing. Attendees will act as advisory jurors in questioning and in rendering a verdict.

THE POWER, POLITICS, AND PROMISE OF INTERNETWORKING

Chair—Jerry Berman, Electronic Frontier Foundation

This session will explore the development of internetworking infrastructures, domestically and worldwide. How will this infrastructure and its applications be used by the general public? What will the global network look like to the average user from Kansas to Kiev? How will politics, technology, and legislation influence the access to, and cost of, the Net? How can the potential of this powerful medium be fully realized?

INTERNATIONAL DATA FLOW

Chair—George Trubow, John Marshall Law School

The trans-border flow of information on international computer networks has been a concern for governments and the private sector. In addition to concerns for privacy and data security, the economic and national security implications of this free flow of information among scientists, engineers, and researchers around the world are also cause for concern. This session will assemble a number of speakers to compare the various perspectives on the problem.

PARTIAL LIST OF SPEAKERS:

*Phillip E. Agre, Department of Communication,
University of California, San Diego*

*Jonathan P. Allen, Department of Information and Computer
Science, University of California, Irvine*

*Sheri Alpert, Policy Analyst, author: "Medical Records, Privacy,
and Health Care Reform"*

*William A. Bayse, Assistant Director, Federal Bureau
of Investigation*

*William Behnk, Coordinator, Legislative Information System,
State of California*

*Jerry Berman, Acting Executive Director, Electronic Frontier
Foundation*

Paul Bernstein, Attorney

Kate Bloch, Hastings College of the Law

Preview

Richard Civile, Computer Professionals for Social Responsibility

Roger Clarke, Reader in Information Systems, Department

of Commerce, Australian National University

Dorothy Denning, Chair, Computer Science Department,

Georgetown University

Robert Edgar, Simon and Schuster Technology Group

Kathleen Frawley, American Health Information Management Association

Emmanuel Gardner, District Manager, Government Affairs, AT&T

Mike Godwin, Staff Counsel, Electronic Frontier Foundation

Joe Green, University of Minnesota

Sarah Grey, computer department, We The People, Brown presidential campaign organization (invited)

Will Hill, Bellcore

Carl Kadie, coeditor, *Computers and Academic Freedom News* newsletter

Mitch Kapor, Chairman, Electronic Frontier Foundation

David Lewis, Deputy Registrar, Department of Motor Vehicles, Commonwealth of Massachusetts

James Love, Director, Taxpayers Assets Project

Judy Malloy, Associate Editor, *Leonardo Electronic News*

Irwin Mann, Mathematician, New York University

David McCown, Attorney

Rob Mechaley, Vice President, Technology Development, McCaw Cellular Communications, Inc.

Robert Naegele, Granite Creek Technology Inc., Voting Machine Examiner, consultant to NY State

Barbara Peterson, Staff Attorney, Joint Committee on Information Technology Resources, Florida Legislature

Jack Reed, Chairman, Information Resource Service Company

Virginia E. Rezmierski, Assistant for Policy Studies to the Vice Provost for Information Technology, University of Michigan

Jack Rickard, Editor, *Boardwatch Magazine*

Randy Ross, American Indian Telecommunications

Roy Saltman, National Institute of Standards and Technology

Barbara Simons, IBM

Robert Ellis Smith, Publisher, *Privacy Journal*

David Sobel, Computer Professionals for Social Responsibility

Ross Stapleton, Research Analyst, Central Intelligence Agency

Jacob Sullum, Associate Editor, *Reason Magazine*

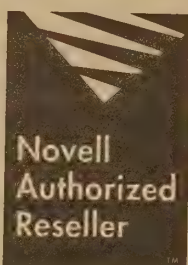
Mark Trayle, Composer

Greg Tucker, Coordinator, David Syme Faculty of Business, Monash University, Australia

Joan Turek-Brezina, Chair, Health and Human Services Task Force on Privacy of Private-Sector Health Records



"Service That's Second to None"



**1 (800) NET - HELP
FOR CNE SERVICES**

**24 HOURS - SEVEN DAYS A WEEK
EMERGENCY SERVICES &
CONTRACT DISCOUNTS**

**THE BAY AREA'S
IMAGING
SPECIALISTS**

FOR DETAILS 1(800) 300-4MIS

WHY PAY MORE??

*** Dealers * Government Agencies
* Resellers * Duplicators**

The Lowest Prices in Branded and Bulk Products:
Diskettes, Data Cartridges, Ribbons and more...

-Verbatim Diskettes 3.5" DD - IBM Format

Box of 10; \$6.30*



3M 1/4" Data Cartridge

DC 600A; \$16.20*

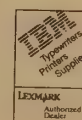
INTERNET TECHNOLOGIES

Authorized Distributor of:

3M **TDK**

Verbatim

Panasonic
Office Automation



1-800-332-TAPE

Fax 408-377-3703

* Prices subject to change w/o notice. Min. Order Required.

* 2105 S. Bascom Ave., Campbell Ca. 95008

It's a MIRACLE SUPPORT, SERVICE, QUICK TURNAROUND



SUPERBOARD 486 VESA LOCAL BUS SYSTEM WITH 256K CACHE

ORCHID

- 4 MB RAM Exp. to 32 MB
- 2 32-Bit Local Bus Slots
- Med Tower Case/Power Supply
- Super IDE/VLB Controller
- TEAC 1.2 MB Floppy Drive
- TEAC 1.44 MB Floppy Drive
- MAXTOR/CONNER 200 MB HD
- Serial/Parallel/Game Card
- Orchid Fahrenheit VLB Card
- Super VGA 1024x768
- Non-Interlaced Color Monitor
- 101 Keyboard
- MS DOS 5.0

486DX-33

\$2099

486DX-50

\$2299

486DX2-66

\$2375

MICRONICS 486 VESA LOCAL BUS SYSTEM WITH 256K CACHE

- 4 MB RAM Exp To 64 MB
- 2 32-Bit Local Bus Slots
- Med Tower Case w/Power Supply
- Super IDE/VLB Controller
- TEAC 1.2 MB Floppy Drive
- TEAC 1.44 MB Floppy Drive
- MAXTOR/CONNER 200 HD
- Serial/Parallel/Game Card
- Orchid Fahrenheit VLB Card
- Super VGA 1024x768
- Non-Interlaced Color Monitor
- 101 Keyboard
- MS-DOS 5.0

486DX-33

\$2099

486DX-50

\$2299

486DX2-66

\$2375



DIAMOND

486 VESA LOCAL BUS SYSTEM WITH 256K CACHE

- 4 MB RAM Exp To 64 MB
- 2 32-Bit Local Bus Slots
- Med Tower Case w/Power Supply
- Super IDE/VLB Controller
- TEAC 1.2 MB Floppy Drive
- TEAC 1.44 MB Floppy Drive
- MAXTOR/CONNER 200 HD
- Serial/Parallel/Game Card
- Stealth 24 VLB Card
- Super VGA 1024x768
- Non-Interlaced Color Monitor
- 101 Keyboard
- MS-DOS 5.0

486DX-33

\$2099

486DX-50

\$2299

486DX2-66

\$2375

VIDEO CARDS

ORCHID FAHRENHEIT VA/VLB	\$229
ORCHID FAHRENHEIT VLB	175
ORCHID FAHRENHEIT 1280 VRAM	195
DIAMOND SPEEDSTAR 24X	159
DIAMOND STEALTH 24	235
DIAMOND STEALTH PRO 1MB	265
DIAMOND STEALTH 24VLB	175
DIAMOND STEALTH PRO VLB	275
DIAMOND VIPER VLB	355
MATROX IMPRESSION 1024	655
MATROX IMPRESSION ULTRA	3445
ATI GRAPHICS ULTRA + ...	325
ATI GRAPHICS ULTRA PRO	425
NUMBER NINE GXI TC29	1699

MONITORS

VIEWSONIC 6E .28mm NON-INT	\$335
VIEWSONIC 5E .28mm 72Hz	395
VIEWSONIC 6FS 15" .28mm 72Hz	545
VIEWSONIC 7 17" .28mm 72Hz	969
VIEWSONIC 8 20" .31mm 72Hz	1535
PROTON CM-142 II .28mm SVGA	269
PROTON CM-1430 .28mm NON-int.	315
NANAO F550i 17" .28mm 1280x1024	1149
SONY CDP-1604S 17" .25mm 1024	995
NEC 3FGX	649
NEC 4FG	785
NEC 5FG	1279

486DX-50 MHz With 256K Cache

- 80486-50 MHz 256K Cache
- Motherboard
- 4 MB RAM Expandable to 32 MB
- Case/Power Supply
- IDE (Hard/Floppy) Control
- TEAC 1.2 MB Floppy Drive
- TEAC 1.44 MB Floppy Drive
- MAXTOR/CONNER 120 MB HD
- Serial/Parallel/Game Card
- Super VGA 1024 x 768 Monitor & 1 MB Card
- 101 Keyboard
- MS DOS 5.0

\$1582

486DX-33 MHz With 256K Cache

- 80486-33 MHz 256K Cache
- Motherboard
- 4 MB RAM Expandable to 32MB
- Case/Power Supply
- IDE (Hard/Floppy) Control
- TEAC 1.2 MB Floppy Drive
- TEAC 1.44 MB Floppy Drive
- MAXTOR/CONNER 120 MB HD
- Serial/Parallel/Game Card
- Super VGA 1024 x 768 Monitor & 1 MB Card
- 101 Keyboard
- MS DOS 5.0

\$1437

386DX-33 MHz With 64K Cache

- 80386-33 MHz 64K Cache
- Motherboard
- 4 MB RAM Expandable to 32MB
- Case/Power Supply
- IDE (Hard/Floppy) Control
- TEAC 1.2 MB Floppy Drive
- TEAC 1.44 MB Floppy Drive
- MAXTOR/CONNER 120 MB HD
- Serial/Parallel/Game Card
- Super VGA 1024x768 Monitor & 1 MB Card
- 101 Keyboard
- MS DOS 5.0

\$1099

386DX-40 MHz..SAME PRICE

CONTROLLERS

ADAPTEC	
1542 B SCSI w/Kit	\$255
1542 B Plus w/ASW3104410	325
1742 A SCSI EISA w/Kit	459

DTC:	
2290 IDE EISA	\$135
3280 SCSI	105
3290 SCSI EISA	479

ULTRASTOR:	
ULT 15C IDE Cache	\$189
ULT 24F SCSI EISA Cache	405
ULT 34F SCSI-2 VLB 32K	295

FAX/MODEMS

Robotics	SPORTSTER	INT ... \$329
	14,400	EXT .. \$369
COMPUTER PERIPHERALS, INC.	VIVA	INT ... \$225
BOCA	V.32 bis V.42 bis	INT ... \$225
	14,400	EXT .. \$295
PRACTICAL PERIPHERALS	V.32 bis V.42 bis	
	14,400	EXT .. \$375
ZOLTRIX 9624		INT \$69
	14.4/14.4	INT ... \$235
	14.4/14.4	EXT .. \$315
ZYXEL U-1496E		EXT .. \$335
ZOOM	V.32bis V.42bis	INT ... \$249
	14,400	EXT .. \$299

HARD DRIVES

CONNER:	MAXTOR:
CP-30104 120 MB	MXT-7120A 130 MB
CP-30174E 170 MB	MXT-7213A 213 MB
CP-30204 200 MB	LXT-340A 340 MB
CP-3544 540 MB	LXT-535A 535 MB
QUANTUM:	LXT-7120S 130 MB SCSI
LPS-240AT 244 MB	LXT-213S 200 MB SCSI
LPS-240S 244 MB	LXT-535S 535 MB SCSI
PRO-1225S 1.2 GB	1555

- * DEALER INQUIRIES WELCOME!
- * PRICES REFLECT COD
- * FINANCING AVAILABLE!
- * OFFICE HOURS: MON-SAT 9:00 TO 5:30
- TERMS:
- * One year warranty on parts and Two Years Labor
- * 30 Day Money Back Guarantee
- * Damaged shipments are the shippers responsibility
- * All merchandise returned must be in original packaging along with RMA number
- * All prices and specifications are subject to change w/o notice



NO SURCHARGE ON CREDIT CARDS!

NORTHERN CALIFORNIA OFFICE:
780 MONTAGUE EXPWAY, #202
SAN JOSE, CA 95131
TEL: (408) 435-8177 FAX: (408) 435-8179

FOR ORDERS CALL:

1-800-969-8177

MIRACLE

SINCE 1985

Authorized PANASONIC, CITIZEN, STAR, OKIDATA Sales & Service Center

SOUTHERN CALIFORNIA OFFICE:
2940 E. LA PALMA AVE., SUITE E
ANAHEIM, CA 92806
TEL: (714) 632-1155 FAX: (714) 632-1592

FOR ORDERS CALL:

1-800-446-9929

The Aliens 4 Virus

And Other Cautionary Tales

BY DAVID
MORGENSTERN

I'm an information pack rat. I clip articles out of magazines and save hundreds of little files containing tips, news, and plain old junk. I go through this unorganized mess a few times a year, when I have a spare moment. It's one of the advantages of having a fair-sized hard drive. You can be a pack rat and still have room to park the spreadsheet in the garage.

While running through the backwaters of my hard drive, I found the announcement of the Aliens 4 virus. You haven't heard of it? Read on...

ALIENATION PROCLAMATION

The wisest man can fool himself. It's an old saying, and richly illustrated in the following story.

Last August, an alert was sent out over the US Defense Information Systems Agency's

Security Coordination Center distribution system about a possible new virus at the Space Environment Lab (SEL) in Boulder, Colo-

rado. SEL is a group of physicists and computer specialists who provide near-real-time forecasts of the solar-terrestrial environment, and other solar research.

Dave Bouwer, a computer support specialist at the Space Environment Lab in Boulder, discovered the virus and called it *Aliens 4*, since it "traveled fast, mutated, and every time you think you've eradicated it, it pops up somewhere else." He claimed that this virus was able to mutate into different forms, making it extremely dangerous and difficult to eradicate.

The SEL lab had not paid much attention to virus attacks. Every month, or whenever anyone thought about it, some older virus detection programs would be run and they "never found a problem." What a surprise.

Some students at the facility were running MandelZot, a shareware fractal program (available on BMUG Paris B2 disk), which notified them that the program had been infected with a virus. (A number of programs will let you know when they've been infected.) Bouwer ran Interferon, Virus Rx 1.6, and Disinfectant 2.4, which informed him that he

had a nVIR infection. He warned the users at the facility that the infection had occurred.

Tension mounted in the computer lab. User problems seemed to flood in, and Bouwer suspected that their Ethernet network was carrying the virus. Since his boss was out of town, he had the division secretary rush-order \$1800 worth of SAM and Norton software. While using SAM to eradicate the virus infections, the MBDF virus was discovered. After the virus code was removed from system files and applications, they would not operate properly.

Somehow Dave Bouwer thought that these occurrences were beyond the realm of the usual virus attack. He got it into his head that he was experiencing the oozing edge of virus technology, an adaptive or polymorphic virus, and sent out the alert to the security agency, warning everyone of this threat.

Two weeks later, he called off the alert, with a lengthy apology and explanation. There was no new virus—it was just a big, big mistake.

Here's a guy with twenty years in the industry as a developer, systems manager, and power user. He's now spent serious time in the doghouse defending his actions to management and users, finding it hard to "maintain political and technical clout after being labeled as a Chicken Little."

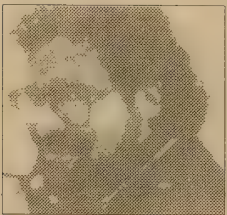
Amazingly, Bouwer still believes that his worksite had a new viral strain that posed a serious risk.

IMPROVING HINDSIGHT

In his letter explaining his actions, Bouwer enumerated the mistakes he felt he made during his brush with the psychosomatic Aliens 4 virus. Let's take a closer look at them.

•**Mistake One: "Overreacting and creating an atmosphere of panic."** This is the first mistake? Is this a joke? This guy has a lab full of computers, and he's not running any anti-virus software. He doesn't have the latest version of any virus utility, even Disinfectant, which is free! There was so little concern about virus activity that no one had bothered to close the door or window against the wind and the rain.

Here's a guy with twenty years in the industry as a developer, systems manager, and power user. He's now spent serious time in the doghouse defending his actions to management and users, finding it hard to "maintain political and technical clout after being labeled as a Chicken Little."



Copyright © 1993 by David Morgenstern. All rights reserved. David Morgenstern believes that computers and BMUG can cultivate a positive change in the world. He volunteers time at BMUG, when he's not working his "regular job," writing, or prowling around the BMUG Bulletin Board. He can be reached through the BMUG office, AOL: david eM, CIS: 72030,1607, and Internet: davidm@sfsu.sfsu.edu.

BMUG's Choice for Macintosh Specialty Store

MACSM

Modern Accessories for Computers
Since 1985

800-BUY-A-MAC

(510) 644-0500

(510) 549-8785

(510) 644-0584

2156A University Avenue, Berkeley, CA 94704

Rental, Lease or Purchase of Macintosh

Order Line for US & CA (Toll Free!)

General Number / Sales Department

Macintosh Repairs

Order by Fax

Store Hours

10:00 a.m. -- 6:00 p.m.

MON -- SAT

ATM



TOP 10 Store in the Bay Area ... San Francisco Examiner Reader Poll

Modem

US Robotics v.32bis FaxModem

- v.32bis 14, 400 Baud Modem Speed
- v.42bis Data Compression
- v.42 & MNP5 Error Correction
- 9,600 Baud Fax Function
- Macintosh Cable & Software Included
- Guaranteed by US Robotics for 5 Years

Mac & Fax \$359
Sale Price

\$20 off M.A.C. STORE PRICE

PowerPort Silver for PowerBook	\$395
Supra 2400 Baud Modem w/ Cable	\$99
Supra 24/96 FaxModem w/ Microphone	\$199
Supra FaxModem v.32bis 14,400	\$359
Teleport Gold v.32bis 14,400	\$459

Memory Upgrade

1 Meg Simms, 100/120ns	\$39
1 Meg Simms, 80ns	\$49
2 Meg Simms, 80ns	\$89
4 Meg Simms, 80ns	\$139
6 Meg Board, PowerBook	\$329
4 to 8 Meg Board, PowerBook Duo	Call
4 to 10 Meg Board, PowerBook 180	Call

Mass Micro

DataPak Removable 44, w/1 Cartridge	\$539
DataPak Removable 44, w/2 Cartridge	\$589
DataPak Removable 88c	\$739

•New Model, Read & Write 44MB Format

Scanner

HP ScanJet IIC, w/ Mac Interface \$1495

- 24 Bit Photo-Realistic Color / 256 Gray-Scale
- True Laser 400 dpi Resolution

UMAX 600dpi Color Scanner \$1195

- 24 Bit Photo-Realistic Color / 256 Gray-Scale
- Best Rated Scanner by MacUser Magazine
- Includes Full Version PhotoShop 2.0 Free
- Amazing and Affordable 600 dpi Resolution

UMAX 800dpi Color Scanner \$1495

Agfa Arcus 1200dpi Color Scanner \$2995

- Fast, Photo Grade Professional Scanner
- Transparency Option Available
- Come to Store for a Test Drive

Printer

NEC SilentWriter Model 95 \$1499

- True 300 dpi Adobe PostScript II Printer
- Twice the speed of Apple Personal LW NT
- 8000-Page Toner & Cable Included

Canon 10ex/Power Print Bundle \$439

- 360 dpi, Canon Bubble Jet Printer
- Compact, Portable--Perfect Powerbook Companion

CLEARANCE

Abaton G/S Flat-Bed Scanner	\$695
Hard Disk, Various Sizes, Used	\$195 & up
Microsoft Excel 3.0	\$99
Microsoft PowerPoint 2.1	\$149
Microsoft Works 2.0	\$99
SyQuest 44MB Removable Drive	\$395
PowerBook 170, 4MB/80HD	\$2695
Radius TPD/19 Monitor, Old Stock, New	\$595
Thunder/24, Fastest 24-bit Card	\$1895
Video Spigot, IIsi & LC w/ Premiere	\$279

Buy Your Macintosh from a Dealer Who Knows About Macintosh

We have everything you need
for your PowerBook

80 MB HD*	\$349
120 MB HD*	\$549
6 MB RAM*	\$329
PowerPort Gold	\$459
Full Cycle Charger	\$139
SCSI Cable	\$ 45
Carrying Case	Start\$ 55
*Upgrade/Swap Price Labor Charge Extra	



PowerBook 160

In Stock 4MB/40HD \$2399

PowerBook 160 4MB/120HD	\$2969
PowerBook 180 4MB/80HD	\$3899
Power Duo 210 4MB/40HD	\$2099
Mac Classic II 4MB/40HD, Cash Only	\$989
Mac LCII 4MB/40HD, Cash Only	\$1099
Mac IIsi 3MB/40HD	\$1195
Mac IIsi 5MB/80HD, Cash Only	\$1479
Mac IIsi 5MB/80HD	\$2049
Mac IIfx 5MB/80HD/CD, In Stock	\$2879
Mac Quadra 700 4MB	\$3549
Mac Quadra 950 8MB, In Stock	\$5595

Trade In Your Mac

SAVE on SALES TAX

- No Hassle Selling - Saves Time
- We Buy or Trade Any Macintosh CPU (Mac Plus minimum) & Peripherals
- Save on Sales Tax - Only Pay Tax on the Difference to the Trade in

Hard Disks

†External Unit
Add \$90 ea.

Quantum ELS 42MB HD	\$249†	Quantum 80MB Pocket HD	\$449
Quantum ELS 85MB HD	\$329†	Maxtor 213MB HD	\$599†
Quantum ELS 170MB HD	\$495†	Maxtor 535MB HD	\$999†
Quantum LPS 240MB HD	\$599†	Fujitsu 520MB HD	\$1099†

Macintosh Rentals

Mac Classic II 4MB/40HD \$99 Monthly	PowerBook 140 4MB/40HD \$199 Monthly	Mac Plus 2MB/20HD \$59 Monthly	Mac IIfx 5/80 13" Color \$199 Monthly
--	--	--	---

Software Special

After Dark	\$28	Might & Magic II	\$39
Arthur's Teacher Trouble	\$42	Missions at Leyte Gulf	\$26
Auto Doubler	\$59	Norton Utility/SAM	\$149
Battle Chess	\$32	Norton Essentials	\$68
Battle Chess, CD	\$54	PGA Tour Golf	\$39
Civillization, New	\$44	Prince of Persia	\$33
HardBall II	\$33	Red Baron	\$42
Hellcat over the Pacific	\$45	Shanghai	\$36
Kid Desk	\$32	Sim City	\$54
Kid Pix	\$34	Spaceship Warlock	\$72
Lemmings	\$39	Star Trek	\$39
MacTools 2.0	\$99	Wallpaper	\$37

Prices Advertised Are for MicroTimes Readers Only. Please Mention This Ad When You Call or Visit Us.

This Ad Expires March 4, 1993

•**Mistake Two:** "When users panic, every glitch that would normally be ignored becomes a symptom of the virus." This is true. Callers on the BMUG HelpLine often think that any little bomb or glitch is the action of a virus. If you're running an anti-virus Extension or Control Panel, you can be almost certain that your crash was brought about by the million and one more common causes of Macintosh problems.

•**Mistake Three:** "Potential loss of data in the organization may not be grounds for overstepping one's authority." It depends on what you're trying to prove to higher-level management. If I had already shown that I had not done any planning for potential virus attack, didn't have any anti-virus software installed, and hadn't trained anyone (including myself) what to do if there was an infection, I'd certainly want to top everything by spending the year's entire software budget on anti-virus and utility software.

•**Mistake Four:** "I should have made absolutely certain I had copies of the suspected virus." Almost all virus detection software saves a log of the viruses discovered on your drive. If you need to prove that you were infected, this is usually enough proof. If you really think you've discovered an unknown virus, save copies of infected programs and files on floppy disks. Make absolutely sure they are labeled properly!

•**Mistake Five:** "Was jumping to a conclusion too soon." When my brother was in medical school, he'd come home swearing that he had all the symptoms of the rare diseases he'd studied in class that day. It's the same thing with computers. Will we see new virus technology in the future? Of course!

Everyone at this Mac lab should have taken responsibility for fighting virus infections. It's possible that you may be the first person to meet and greet a new virus, but it's unlikely to happen. The only way to know that you've found something totally new is to be absolutely certain that you're not being attacked by an old enemy.

TIPS OF THE ASCENDED MASTERS

Here are a few of BMUG's virus tips.

•**You must have up-to-date anti-viral programs.** There's no excuse for having anything but the latest version of whatever commercial or shareware software you or your company decide to use. There's really no point in having and using out-of-date programs, like Interferon or Virus Rx. These ancient fighters

don't know any of the new tricks and are useless—throw them away.

•**Effective anti-viral setups must employ some type of Extension or Control Panel.** These are memory resident programs that constantly check the software you're running for a virus attack. This is the best way to avoid an infection—to catch it before your system is overrun with bugs.

•**Learn how to use the anti-virus software you have.** It's too late to start learning about viruses and the way to get rid of them when you're already infected. Disinfectant has an excellent history of Macintosh viruses, as does Henry Schmitt's Virus Encyclopedia stack, both on the BMUG V1 disk. Some viruses are tricky and need special handling. This is information that you will only discover by reading the "manual."

•**Everyone needs to be involved with safe hex.** It can't be the responsibility of just one person. Everyone needs to understand the issue and what to do if a virus attack occurs. Print out this information, and don't leave it to be poorly remembered during a panic. There are Macintosh viruses that can look out over networks to cause mischief, so that the infection does not have to result from an action you've taken (sticking a floppy in a drive or launching an infected program). But it is up to everyone to be the front line in the fight against computer virus attacks.

•**Virus infections can really screw up your disk files.** You can't assume that your anti-virus software will be able to fix the damage. Avoidance is the best medicine. If you are left with a bunch of screwed-up programs, documents, and directories, then you'll want to restore them with a disk archive and daily backup. Yet another good reason to regularly back up your data.

•**If you read the lists of virus dos and don'ts from other writers, they invariably take a shot at publicly distributable software.** Shareware is not the common vector for virus attacks. Commercial shrink-wrapped programs and value-added resellers have been responsible for the greatest spread of individual viruses. BMUG and other user groups are well aware of the threat of viruses and are actively involved in the fight against them. The programs on our disks and bulletin board system have all been checked.

BYTES AND PIECES

I've been accused of ignoring the tips department. Can this be true? Here are some tips for

What Is BMUG?

BMUG is an educational, nonprofit, consumer advocacy group organized to share information and provide critical direction to users and developers in the computer community worldwide. It is an independent advocate, not affiliated with any manufacturer, delivering trustworthy information and useful products.

Like any growing organization, it is many different things to its fourteen thousand international members. BMUG supports many Special Interest Groups (SIGs), a Bulletin Board System (BBS), free HelpLine, software library, weekly meetings, publications, and much more. BMUG also puts out a semi-annual 400+ page book that we call our "newsletter."

Our motto continues to be: *We're in the business of giving away information.*

Come and join in the dialogue at the BMUG main meeting every Thursday evening, 6–9 pm (or whenever we finish), in the Physical Sciences Lecture Hall on the UC campus. BMUG West and BMUG South are monthly meetings held in San Francisco and San Jose.

The BMUG Office, 2055 Center St. (a half block from the BART station), is open to the public from 9 am to 5 pm. Please come by and say hello, meet other members, and hang out.

The BMUG HelpLine, (510)540-1742, and our fax number, (510)849-9026, provide technical assistance and telephonic hand-holding during business hours (11 am–5 pm). If your question can't be answered on the spot, we try to get you in touch with someone who can help. Of course, not every problem can have a happy ending—but we try.

BMUG has one of the most up-to-date, comprehensive software libraries around with hundreds of disks filled with the latest versions of public domain or shareware programs, and HyperCard stacks. New disks are unveiled almost every week at the Thursday general meeting. BMUG also brings you the *TV-ROM™*, a fantastic collection of public domain QuickTime videos.

Our new graphic user interface, FirstClass, 18-line BBS offers many of the latest versions of files in our software library as well as news, private mail, rumors, etc. With our multiline capability, you can have access to BMUG almost twenty-four hours a day. It's easy to use, fun, and a great resource.

BMUG can be found on most electronic services. BMUG can also be reached through the Internet international network through bmug@aol.com.

To get some further information about BMUG please write to: BMUG, 1442A Walnut St., #62, Berkeley, CA 94709. If you prefer to phone our business office call (510)549-BMUG, or fax (510)849-9026.

the connoisseur.

•**Frederic Rinaldi**, the author of many useful XCMDs, recently warned of a new Trojan Horse. A Trojan Horse is a program that masquerades as something harmless and performs some covert action, usually destructive. The effects may be noticed immediately, when the program erases your hard disk, or later with some insidious result. Unlike a computer virus, a Trojan Horse doesn't replicate itself—it's a one-shot job.

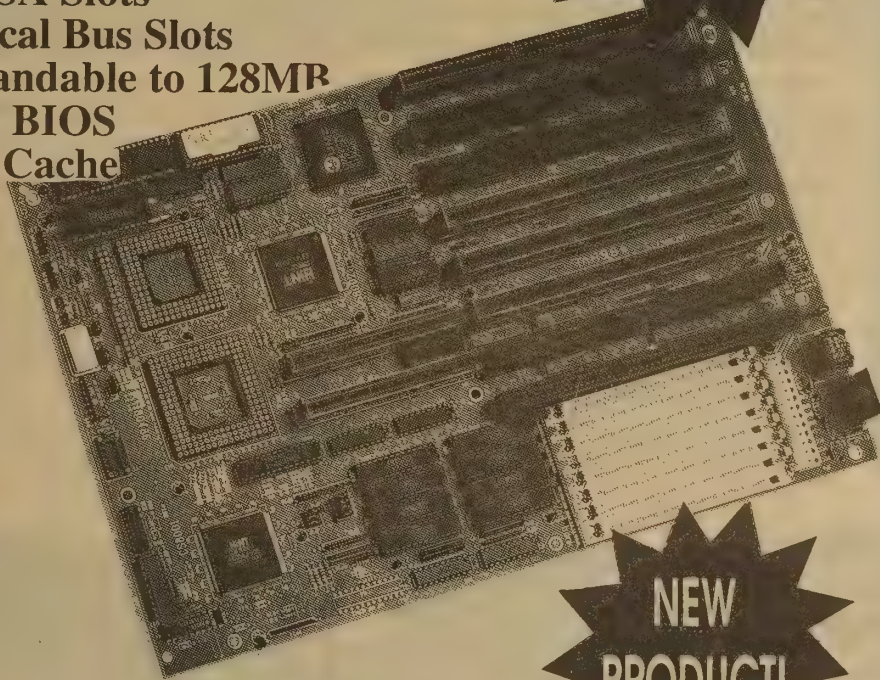
32-Bit VESA LOCAL BUS

LOCAL BUS SPEEDS UP WINDOWS, MULTIMEDIA & CAD UP TO 5X AS FAST!! NOW YOUR CHOICE IS VESA LOCAL BUS!!

486-VESA LOCAL BUS 33/50/DXII-66 MHz

Includes:

- 3 EISA Slots
- 2 Local Bus Slots
- Expandable to 128MB
- AMI BIOS
- 64K Cache

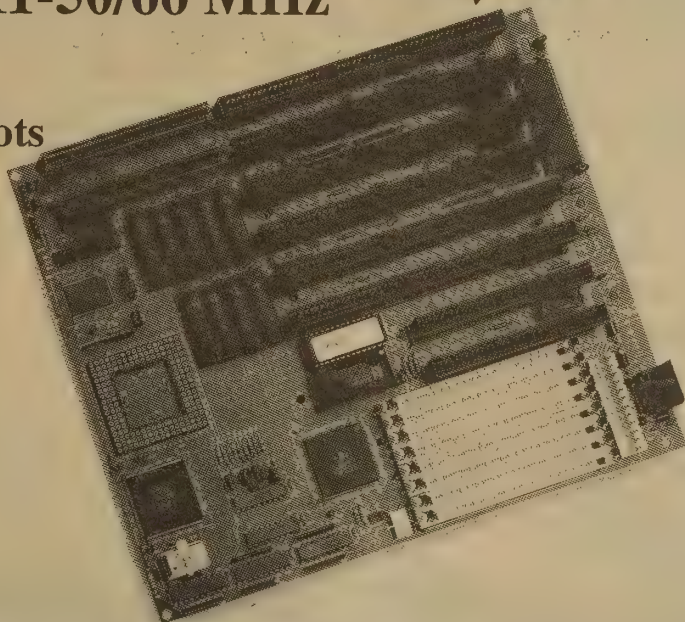


**GREAT
LOW
PRICES!**

486-VESA LOCAL BUS DX-33/DX 11-50/66 MHz

Includes:

- 8 ISA Slots
- 2 Local Bus Slots
- AMI BIOS
- 64K Cache



**NEW
PRODUCT!**

Now Is The Perfect Time To Upgrade Your Older Computer Systems To The *Latest And Fastest* Technology with

COMWARE'S

**NEW 486 VESA LOCAL BUS
MOTHERBOARDS.
PRICES START AT ONLY**

\$160.00*

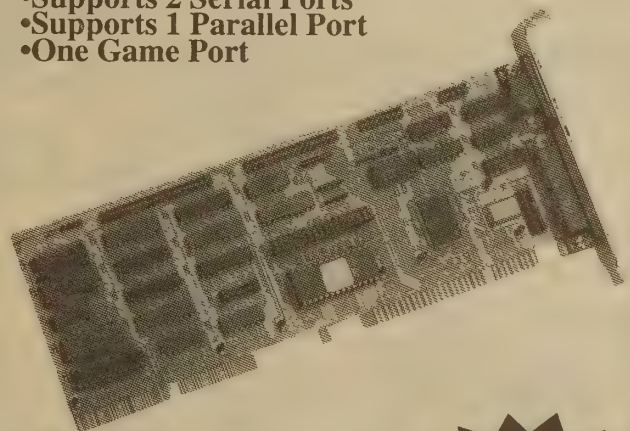
Completely Compatible
With Your 286 & 386 Software

**CALL TODAY FOR MORE
INFORMATION!**

*Limited Time Offer

VESA LOCAL BUS I/O CARD

- Compatible with VESA Local Bus Standard
- IDE Port Supports 2 IDE HDD
- Supports 2 Floppy Drives
- Supports 2 Serial Ports
- Supports 1 Parallel Port
- One Game Port



**CALL
NOW!**

**DEALERS, VOLUME BUYERS, VAR'S CALL FOR QUANTITY PRICES
CORPORATE PO'S WELCOME**

COMWARE
MICRO, INC.

(800) 286-0288
2247 RINGWOOD AVE.
SAN JOSE, CA 95131

(408) 433-0288
Fax: (408) 433-0254
HOURS: M-F 9-5:30
* Prices Subject To Change w/o Notice

This time the Trojan horse is in a stack called Hermes Optimizer 1.1. It was distributed through the Olympus BBS. The stack claims to "decrease the level of fragmentation in your Hermes Shared file," but it in fact renames all files on the hard disk, moves directories, and then deletes them all.

There are a number of utilities that can recover deleted files, but after they're renamed and moved, it's a mess. You'd have to go through every file one by one. Frederic was dismayed to find his XCMDs/XFCNs put to this use, especially since he's given special credit in the stack! Please be careful and be on the lookout for this stack.

•Fun new shareware After Dark screensaver modules appear on the PlanetBMUG BBS every week. But not all screen savers are created equal.

One of the cute modules in the original After Dark set is Fish!, which creates a virtual aquarium on your desktop. It's wonderful, but has a problem—it can defeat its job as a screensaver! One of the options in Fish! will display the floor of the aquarium, called Show Sea Floor. Remember that one of the points of having a screen saver is to keep pixels turned off, or moving. If a program (usually the Finder with the menubar) keeps showing the same thing in the same place, your screen will eventually have a permanent ghost image burned in. This ghost image could be of the sea floor if you don't turn it off. This is mentioned in the After Dark manual, but who can honestly say that they've read it?

•The PowerBooks can go almost anywhere we can—in the bar, the bedroom, and bathroom. If your trackball starts acting strangely, take a look down at your fingers. Late night computing in front of the television with a beer and a bowl of roasted peanuts can lead to an erratically tracking pointing device. Pop out the trackball and wash it (and your hands too) to get off the oil. This should get your work back in traction and stop the cursor cussing.

SHAREWARE SPOTLIGHT

If you haven't heard about QuickTime, where have you been? The best way to find out about this great digital video technology is to read BMUG's new book, *Quicker QuickTime*. Judith Stern and Robert Lettieri have focused this book to a nontechnical audience, with clear, simple explanations of how QuickTime works and what it can do for you. There are step-by-step instructions for viewing, editing, and making your own digital movies, as well as plenty of tips and tricks to amaze the wife, kids, and grandma. The \$12.95 price includes a disk containing QuickTime 1.5, the MoviePlayer application, and some QuickTime movies. ■

FAX / MODEM BEST PRICES GUARANTEED QUALITY DIRECT FROM MANUFACTURER

PCMCIA S/R FAX/MODEM 942 PCM	\$299
1496 HIGH SPEED POCKET FAX/MODEM	\$289
1414i INTERNAL HIGH SPEED S/R FAX/MODEM	\$209
1414e EXTERNAL HIGH SPEED S/R FAX/MODEM	\$249
9642 Bis INT./EXT. S/R FAX/MODEM	\$79/\$89
9624 INT./EXT. S/R FAX/MODEM	\$50/\$52
2442 INT./EXT. MODEM	\$47/\$52
POWERBOOK S/R FAX/MODEM	\$149
AST/TOSHIBA S/R FAX/MODEM	\$129

**EXTERNAL FAX/MODEMS ARE AVAILABLE
FOR APPLE AND MACINTOSH PRODUCTS.**

DEALERS AND RUSSIAN INQUIRIES WELCOME!

- 5 Year Warranty
- Unlimited Technical Support
- Volume Discounts Available
- Prices Subject To Change Without Notice

COMPLUS, Inc.

POWER OF COMMUNICATION

4151 BUSINESS CENTER DR. FREMONT CA 94538

TEL: 510-623-1000

FAX: 510-623-1004

Efi's DISCOUNT COMPUTERS

3Com®

AST
RESEARCH INC.

EVEREX

Canon

SAMSUNG

MITSUBISHI
ELECTRONICS

TOSHIBA

intel®

ZENITH
data systems

NEC

i-MEGA

Acer

JUST A SAMPLE

**LOWEST PRICES ON ALL
AST PRODUCTS GUARANTEED!**

New AST Notebook 386/SL25 w/4MB, 60MB	\$2149
AST Power Premium 486/33	from 1925
AST Power Premium 386/25SX	from 1225
Everex Step 386/SX16, 2MB	.695
IBM Value Point 486/DX33, 8MB, 128K Cache, 120MB, 1.44, 1MB VGA, Mouse, one year on-site	.1695
IBM 386SLC, 80MB, 1.44, 2MB, DOS 5.0, 1MB VGA, Mouse	.999
ALR Power Flex 386/33SX, 2MB, 512K VGA, 1.44	.595
Canon 10EX	.269
New Citizen GSX 230/240	.269/319
32 Bit EISA Ethernet 3C579	.239
Seagate 40MB w/Data Compression	.145
Appoint Mouse Pen	.65
96/24 Internal Modem	.69

Prices reflect a cash discount only

TWO User network Starter Pack

FREE!!!

with purchase of Ethernet Card

altima

OKIDATA

IBM

COMPAQ

ALR

ALPS
AMERICA

Panasonic

EPSON®

HEWLETT
PACKARD

Hayes®

CITIZEN

Fax for inquiries, price bids & purchase orders: (510) 283-1744
Free delivery and installation of systems within 30 miles. Free in-store installation of any product.

CALL US FOR YOUR PRICE ON ANY PRODUCT.

HOURS: MON.-FRI. 10-6, SAT. 10-2

3441 GOLDEN GATE WAY, LAFAYETTE, CA 94549

(510) 283-1700

CALL BEFORE YOU BUY

We are actively seeking minority businesses supplying computer products. Please call!
Prices may change without notice. 90 day warranty on all products.

YOUR CONNECTIVITY SPECIALIST

CALL FOR FREE ON-SITE CONSULTATION

CALL FOR NETWORK UPGRADES

NETWORKING

SALES
INSTALLATION
ON-SITE SERVICE

NETWORK SOLUTION

NETWORK SYSTEMS

5 USER\$6399
10 USER 9039
20 USER.....18,896
50 USER CALL
100 USER CALL
250 USER CALL

WORKSTATION 386-DX33 W/64K CACHE

- 1 MB RAM
- Serial/Parallel Ports
- 16 bit Ethernet
- Mono Monitor
- Mono Card
- Network Cable
- Network Software
- Diskless Station

CALL FOR INFORMATION

SERVER/WORKSTATION 486-50 W/64K CACHE

- 4 MB RAM
- 1.2 & 1.44 Floppy
- 200 MB Hard Disk
- Ethernet Card (10 m/s)
- 1:1 Hard Disk Card
- 2 Serial, 1 Parallel Ports
- Monitor & Card
- 250 MB Tape Back-Up

CALL FOR INFORMATION

NOVELL NETWORK SOFTWARE

NOVELL 2.2

5 User\$549
10 User 1149
50 User 1949

NOVELL 3.11

5 User\$629
10 User 1429
20 User 1998

CALL FOR 50-250 USERS LOW PRICES!!

CALL FOR NOVELL UPGRADES 3.11 W/4.0 OPTIONS

NETWORKING PRODUCTS

8 Bit EN1000	\$89	UPS 400W	\$199
16 Bit EN2000	109	UPS 600W	269
10 Base T 16 Bit ...	119	UPS 900W	599
10 Base T 8 Bit	109	Tape Back-up 120MB ...	229

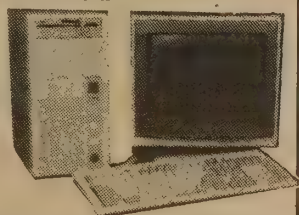
CALL FOR OTHER NETWORK PRODUCTS

LIFETIME WARRANTY ON LABOR & 2 YEARS PARTS WARRANTY

386-33 w/64K CACHE

- 4 MB RAM 70ns
- 120 MB Hard Drive
- 1.2 & 1.44 MB Floppy Drives
- Mini-Tower Case
- SVGA 1 MB Card
- SVGA Monitor .28dp
- 2 Serial, 1 Parallel, 1 Game Ports
- 101 Keyboard
- DOS 5.0
- Motherboard

\$999



FREE BAY AREA DELIVERY or MOUSE w/SYSTEM

486-33/50 w/256K CACHE

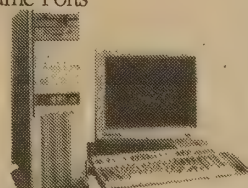
- 4 MB RAM 70ns
- 120 MB Hard Drive
- 1.2 & 1.44 MB Floppy Drives
- Mini-Tower Case
- SVGA 1 MB Card
- SVGA Monitor .28dp
- Local Bus Slot
- 2 Serial, 1 Parallel, 1 Game Ports
- 101 Keyboard
- DOS 5.0

\$1495

50 MHz

FREE BAY AREA DELIVERY or MOUSE w/SYSTEM

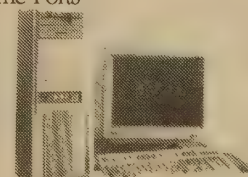
\$1345
33 MHz



486-66 DX2 w/256K CACHE EISA

- 4 MB RAM 70ns
- 200 MB Hard Drive
- 1.2 & 1.44 MB Floppy Drives
- Full-Tower Case
- SVGA 1 MB Card
- SVGA Monitor .28dp
- Local Bus Slot
- 2 Serial, 1 Parallel, 1 Game Ports
- 101 Keyboard
- DOS 5.0

\$1999



FREE BAY AREA DELIVERY or MOUSE w/SYSTEM

THESE SYSTEMS MADE WITH U.S. MADE MOTHERBOARDS!

EMI
INTERNATIONAL INCORPORATED

732 CHARCOT AVE., SAN JOSE, CA
(408) 321-9101
FAX:(408) 321-9104

HOURS:

MON-FRI: 8-6 SAT:10-4
PRICE SUBJECT TO CHANGE W/O NOTICE



MONTAGUE		830
JUNCTION	OTTOLE	
CHARCOT		830
X		
BROKAW		

MICROTECH

International

Since 1986
Complete Service Center

Z Hwy 80	To Berkeley Powell To San Francisco Bay Bridge	Hollis	Doyle	San Pablo Ave.

Centrally located—15 min from San Francisco
5 min from Oakland—5 min from Berkeley

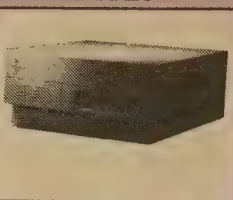
WE SHIP ANYWHERE!

APPLE®

New Multitasking Solution

Apple® Macintosh® IIfx 5/80, CD ROM

- 32MHz 68030 Processor
- 1MB VRAM supports up to 32,000 Colors on board video
- Operates at twice the speed of ordinary CD ROM
- 3 NuBus™ slots for expansion

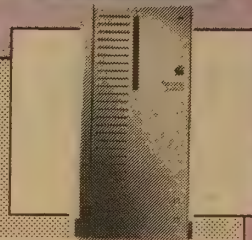


\$2799

Keyboard & Monitor sold separately

Apple® Macintosh Quadra™ 700 4MB/213MB HD

- 25MHz 68040 Processor
- Fast Maxtor Hard Drive
- Supports Million Colors with 2MB VRAM
- Excellent for File Sharing without dedicated Server
- 9 Built-in Ports for Peripherals

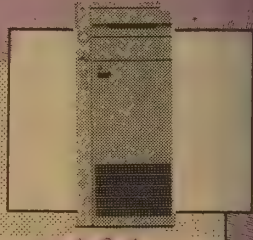


\$3899

Keyboard & Monitor sold separately

Macintosh Quadra™ 950

- 33MHz 68040 Processor w/Built-in math coprocessor
- Built-in Ethernet/AppleTalk support
- 8MB RAM exp. to 64MB
- Supports up to 5 storage devices internally
- 5 NuBus Slots and a processor direct slot
- Built-in support for 16 & 24 bit color

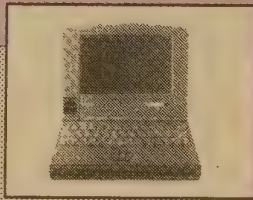


SUPER BUY

\$5300

Apple® Macintosh® PowerBook™ Duo™ 230/210

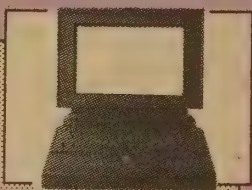
- 68030 Processor w/33/25 MHz
- 4MB RAM up to 24MB
- Built in support for 256 colors
- Can be used as complete Desktop w/Duo Dock
- Lightest weight NoteBook 4.2lb.
- Built in Apple Talk® networking & file sharing without dedicated server



Call for Price/Availability

Apple® Macintosh® PowerBook™ 160 4/40, 4/80, 4/120

- 25MHz 68030 Processor
- 4MB RAM expandable to 14
- Video out for external monitor
- Supertwist bright display
- Internal 1.4MB Apple Super Drive



\$2149/2499 CALL

Apple® Macintosh® PowerBook™ 145 4/40, 4/80

- 4MB RAM, 40 & 80MB HD
- Runs virtually all Macintosh Software Applications
- File sharing without dedicated server
- Remote Access capability



\$1949/2249

Apple® Macintosh® IIfx 5/80, 5/230

- Power with room to grow
- Internal Cache card for increased performance
- 70% faster than Mac IIsi
- Excellent choice for business

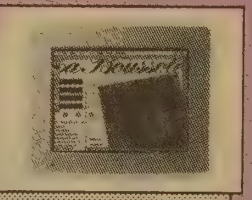


\$1949/2349

Keyboard & Monitor sold separately

Apple® Macintosh® 14"/16" RGB Displays

- Supports 640x480 resolution on 13" and 832x624 on 16"
- Produces bright and vibrant colors on high contrast screen
- Works with Mac built in video



CALL FOR PRICE/AVAILABILITY

Apple® Macintosh® IIsi 3/40, 5/80, 5/160

- 20MHz - 68030 Processor
- Built-in video support
- Expandable to 17MB RAM
- Built-in AppleTalk
- Excellent choice for home or office use



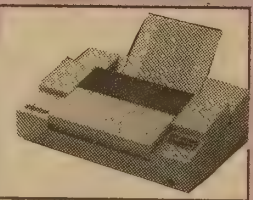
SPECIAL DEAL

\$849/1049/CALL

NEW APPLE® PRINTERS

Apple® Color Printer

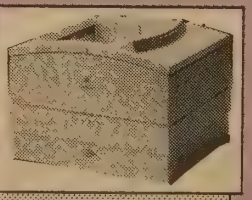
- 360 dpi resolution
- 68030-25MHz Processor
- 4MB RAM exp. to 32MB
- 8ppm
- Optional Photo™ Grade Kit support 600dpi gray scale



\$2199

Apple® LaserWriter® Pro 600

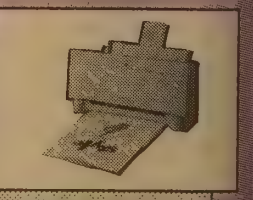
- Optional Photo Grade Kit prints at 600 dpi
- Supports MAC, MS-DOS, Windows Environment
- 68030-25MHz Processor
- 4MB exp. to 32



\$1699

Apple® Stylewriter® II

- 360dpi
- 1MB Memory
- 39 True Type™ Fonts
- Multi purpose envelope & paper tray



\$325



Authorized Reseller

Authorized**
Dealer For:

AST COMPAQ TOSHIBA IBM NEC

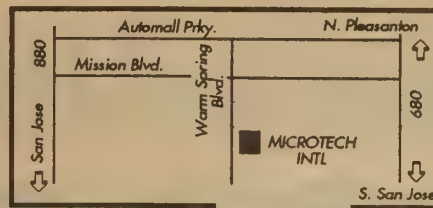
0% FINANCING AVAILABLE FOR 90 DAYS

EMERYVILLE

5865 Doyle Street
Emeryville, CA 94608
TEL: (510) 658-1433
FAX: (510) 658-7339

FREMONT

47000 Warm Springs Blvd. #8
Fremont, CA 94539
TEL: (510) 226-8650
FAX: (510) 226-8652



Hours:
Mon - Fri 9-6
Closed Sat & Sun
Closed Fri 1-2
Fremont Store Open
Sat. 11-5 thru Dec.

THE BEST NOTEBOOKS IN THE MARKET

SPECIAL Toshiba Notebook T1850



- 386-25MHz Processor
- 4MB RAM exp. to 12MB
- 80MB Hard Drive
- 256 Grayscale display
- Coprocessor support

\$1699
IN STOCK

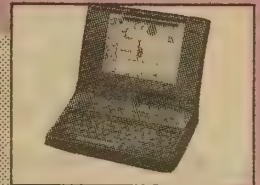
The Most Affordable Color Notebook by Toshiba T1850C



- 4MB RAM expandable to 12MB
- 25MHz 80386 processor
- Excellent Adjustable viewing angle display
- 256 Colors on 1850C
- CoProcessor i387SX-25 slot
- Permits easy data exchange with external devices

**IN
STOCK**

Toshiba's New T4400C Color Notebook 120/200



- 80486 Processor
- 4MB Standard RAM up to 12MB
- World Class Quality Screen
- Optional Modem Slot

**CALL FOR
PRICE/
AVAILABILITY**

AVANTI Notebook

Complete Package
486slc-25, w/Math Co.



- 4MB RAM/120MB HD
- 9600/2400SR Fax Modem
- Pre Installed DOS 5.0 & Windows 3.1
- Notebook carrying case
- Enhanced keyboard

\$2649

CALL FOR OTHER MODELS!

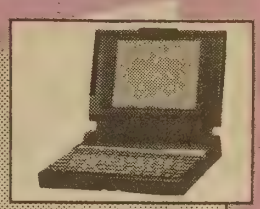
AVANTI Notebook Complete Package 386-33



- 4MB RAM/80MB HD
- 9600/2400 SR Fax Modem
- Notebook carrying case
- Trackball included
- Pre Installed DOS 5.0 & Windows 3.1

\$2149

IBM TOP SELLER ThinkPad 700/700C

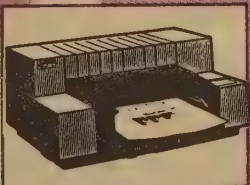


- 80486SLC w/25MHz
- 4MB RAM and 120MB HD
- Bundled Software w/DOS & Prodigy
- Supports external VGA

**CALL FOR
OUR SPECIAL
PRICES**

Now taking orders!

HP InkJet Printer F/Macintosh® DeskWriter/ DeskWriter C/ DeskWriter 550C

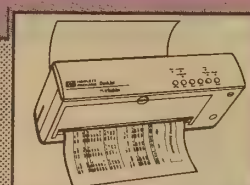


- 3 Year mfg. warranty
- Extremely quiet operation
- 300 dpi printing
- 7 ppm in best mode 550C

\$CALL

* After Manufacturer's Rebate

HP DeskJet Portable

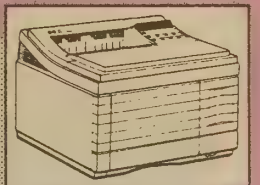


- 300 dpi, laser quality
- Lightweight 4.4 lbs
- Built-in fonts
- Prints up to 100 pages on battery power

\$389

Battery \$49
Paper Feeder \$89
Carrying Case \$89
Rapid Recharger \$89

HP LaserJet 4 /4M

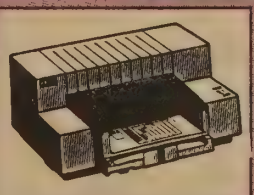


Postscript with
4MB Upgrade
Installed

\$SPECIAL

HEWLETT-PACKARD PRINTERS

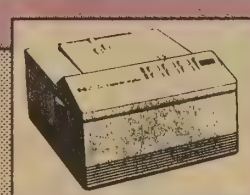
HP InkJet Printer F/PC DeskJet 500 DeskJet 500C New DeskJet 550C



- 3 Year mfg. warranty
- Extremely quiet operation
- 300 dpi printing
- 7 ppm in best mode 550C

**\$365/479/
679**

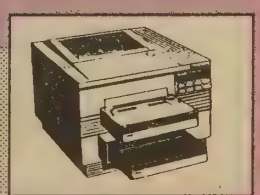
HP LaserJet IIP Plus/IIP



- 300 dpi enhanced printing
- 4 ppm printing speed
- Compact desktop size easy to fit in tight space
- SR/Par support F/IIP
- 14 resident fonts
- Fully compatible and easy to setup

\$755/939

A True Laser Printer for Hi- Volume Printing HP LaserJet IIID/IISI



- 8/17 ppm with 300 dpi resolution
- Standard/Optional duplex printing
- Supports SR/Par/LocalTalk on IIID
- 1-Year on-site warranty
- Wide variety of built-in fonts

**CALL
FOR BEST
PRICE**

Apple, the Apple logo, Macintosh, Mac, StyleWriter and LaserWriter are registered trademarks of Apple Computer, Inc. All other brand and product names are trademarks of their respective companies.

PRICES REFLECTED A CASH DISCOUNT
ADD 3% FOR TERMS/ CREDIT CARDS

All prices are subject to change without notice.
Prices good through 3/4/93.

HP HEWLETT
PACKARD

NOVELL radius

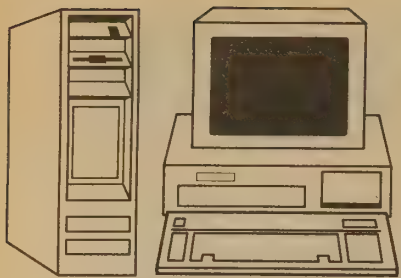
EPSON

**TEXAS
INSTRUMENTS**

OKIDATA

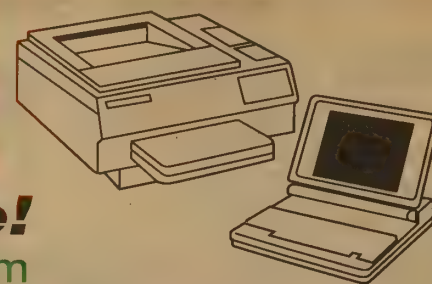
Apple/IBM
authorization-
Emeryville Store Only

OR LOW MONTHLY PAYMENTS



CompuMart

Quality, Service and Value!
Experience it in our Ultra Modern Showroom



COMPLETE PC SYSTEMS BY OPTIGOLD

ALL SYSTEMS ARE FCC CLASS B, 14" SVGA MONITOR INCLUDED

486DX-33/4M/130MB HD	\$1,375	386SX-25/2M/80MB HD	\$ 760
486DX2-50/4M/130MB HD	\$1,440	386DX-33/4M/80MB HD	\$ 945
486DX-50/4M/130MB HD	\$1,560	386DX-40/4M/80MB HD	\$ 985
486DX2-66/4M/130MB HD	\$1,635	486SX-25/4M/80MB HD	\$1,065
ADD \$100 FOR LOCAL BUS SYSTEM			

NOTEBOOK PC

CHICONY 386SX-20/1MB/60MB HD	\$ 975
386SX-25/4MB/80MB HD	\$1,350
386SXL-25/4MB/80MB HD	\$1,400
CHAPLET 386SX-25/2MB/80MB HD	\$1,150
386SL-25/4MB/80MB HD	\$1,490
TOSHIBA T4400SC 120MB COLOR	\$3,675
T4400SC 200MB COLOR	\$4,275

DRIVES

Conner	80MB IDE	\$209
	120MB IDE	\$269
	212MB IDE	\$369
	540MB IDE	\$899
Fujitsu	520MB IDE/ SCSI	\$890
Quantum	80MB IDE	\$209
	120MB IDE	\$269
Maxtor	80MB IDE	\$209
	130MB IDE	\$269
	213MB IDE	\$369
	340MB IDE	\$599
	340MB SCSI	\$599
Seagate	80MB IDE	\$209
	130MB IDE	\$269
WD	85MB IDE	\$209
	212MB IDE	\$369
Sysgen	Easyfloppy 3.5E 1.44MB w/ kit	\$185
	Mobil Disk Ext 40MB	\$384
	Portable 3.5" 1.44MB	\$225
	Portable 5.25" 1.2MB	\$225
SyQuest	SYDOS-44i 44MB Int w/ kit	\$460
	SYDOS-44E 44MB Ext w/ kit	\$510
	SYDOS-88E 88MB Ext w/ kit	\$780

MULTIMEDIA

Creative Lab	Sound Blaster	\$ 89
	Sound Blaster Basic	\$149
	Sound Blaster Pro	\$175
	Sound Blaster 16	\$239
	Video Blaster	\$349
	Multimedia Upgrade Kit (Int)	\$549
Media Vision	Pro Audio Spectrum 16	\$205
	Pro Audio Multimedia Kit 16	\$895
	Fusion CD 16E	\$519
NEC	CDR-37 Portable CD-ROM	\$425
	CDR-84 Internal CD-ROM	\$529
	CDR-74 External CD-ROM	\$599
	CD Express Kit w/ CDR-27	\$445
Sony	CDU31A Internal CD-ROM	\$255
	CDU541 Internal CD-ROM	\$425
	CDU721 External CD-ROM	\$549
Texal	DM-3024 Internal CD-ROM	\$425
	DM-5024 External CD-ROM	\$549

SCANNERS

Artec	Portable Handheld Scanner Parallel Int	\$ 275
Caere	Typist Plus Graphics Scanner w/ OCR	\$ 295
HP	ScanJet IIP	\$ 840
	ScanJet IIC	\$1449
Logitech	Scanman 32	\$ 135
	Scanman 256	\$ 249
	Photoman Digital Camera	\$ 495
Tamarack	ArtiScan Flatbed Scanner Color 600DPI	\$1050
Microtek	Scanmaker II Color 600DPI	\$ 849

PRINTERS

Citizen	GSX-230/ GSX-240	\$265/\$ 315
	PN-48	\$ 285
Cannon	BJ-10EX/ BJ20	\$299/\$ 389
	BJ200	\$ 359
Panasonic	KX-P1180i/ KX-P2180	\$149/\$ 159
	KX-P2123/ KX-P2124	\$239/\$ 319
HP	Deskjet 500	\$ 395
	Deskjet 500C/ 550C	\$525/\$ 725

LASER PRINTER

HP	IIP+/ IIP	\$775/\$ 995
	4/4M	\$1429/\$1975
IBM	Lexmark 4019E	\$ 795
Okidata	OL400	\$ 599
NEC	Model 95	\$1420
Panasonic	KX-P4410/ KX-P4430	\$629/\$ 885
QMS	PS410	\$1399

CONTROLLERS

Always	IN 2000	\$182
Adaptec	AHA-1522K SCSI	\$159
	AHA-1542BK SCSI	\$255
Ultrastor	15C IDE	\$199
	14F SCSI	\$229
	34F VLB/ SCSI	\$299

NETWORK

3COM	509 Etherlink Coax/ TP	\$139
Artisoft	Lantastic 2Mbps Starter Kit	\$325
	Lantastic AE-2 Ethernet Starter Kit	\$449
Compulan	16 TP Ethernet	\$ 99
	Ethernet TP Pocket Adapter	\$169
Intel	Ethernet 16 Coax/ TP	\$131
Novell	Netware Lite & Dr. DOS 6.0	\$ 51
	Netware V3.11 5 Users	\$585
	Netware V3.11 10 Users	\$1229
	Netware V3.11 20 Users	\$1699
SMC	Elite Ethernet Plus 16 TP	\$ 135
	Elite Ethernet 16 Combo Coax/ TP	\$ 163

MODEMS

Hayes	Optima 14.4 + Fax 14.4 Ext	\$449
	Optima 14.4 Ext	\$419
Intel	SatisFAXtion 400 Int/ 400E Ext	\$399/\$439
Practical P	PM14400FX Int/ FXSA Ext	\$359/\$389
	Fax Me	\$184
US Robotics	Sporter 14.4 Int/ Ext	\$299/\$329
	Sporter 14.4+Fax Int/ Ext	\$339/\$359
	Worldport 9600 Pocket	\$339
Zoom	14.4 + Fax Int	\$235
	14.4 + Fax + Winfax Ext	\$285

VIDEO BOARDS

ATI	Wonder XL24 1MB	\$155
	Graphic Vantage 1MB	\$235
	Graphic Ultra 1MB	\$285
	Graphic Ultra + 1MB/ 2MB	\$299/\$349
	Graphic Ultra Pro 1MB/ 2MB	\$449/\$509
Diamond	SpeedStar 24X 1MB	\$165
	Stealth HI-Color 1MB	\$220
	Stealth 24 VLB 1MB	\$199
	Stealth Pro VLB 1MB/ 2MB	\$255/\$385
Orchid	Fahrenheit 1280 1MB	\$169
	Fahrenheit VA 1MB	\$219
	Fahrenheit VA/VLB	\$229
Genoa	8500 VL	\$175

MONITORS

NEC	3FGX 15" Multisync .28 1024x768 NI	\$ 645
	4FG 15" Multisync .28 1024x768 NI Flat	\$ 745
	5FG 17" Multisync .28 1280x1024 NI Flat	\$1320
	6FG 21" Multisync 1280x1024 Flat	\$2345
Supercom	ST-1497 14" Multisync .28 1024x768 NI 75Hz	\$ 320
	ST-1791 17" Multisync .26 1280x1024 NI	\$ 849
Viewsonic	VSC6E 14" .28 1024x768 NI	\$ 350
	VSC6FS 15" .28 1024x768 Flat	\$ 595
	VSC7 . 17" .28 1280x1024 NI	\$1010
	VSC8 . 20" .31 1280x1024 NI	\$1510



Tel: (510) 946-1234

SOFTWARE

Aldus	Pagemaker for Windows	\$485
Borland	Borland C++ 3.1 & Application Frame	\$485
	Paradox 4.0	\$489
	Dbase IV 1.5	\$459
	Quattro PRO Window 1.0	\$298
Corel System	Corel Draw & CD for Windows	\$365
Lotus	1-2-3 Windows/ DOS	\$325/\$385
	AmiPro for Windows	\$265
	Freelance for Windows	\$335
Micrografx	Picture Publisher	\$327
Microsoft	Access	\$ 99
	Excel for Windows	\$299
	Office for Windows	\$459
	Word for Windows	\$299
SW Publish	Harvard Graphics for Windows	\$375
Symantec	Norton Desktop	\$115
	Norton Utilities for Windows	\$115
WordPerfect	Wordperfect 5.2 for Windows	\$249
	Quickbooks/ Quicken	\$ 84/\$ 38
	Turbo Tax	\$ 48
	Tax Cut	\$ 48

TAPE BACK-UP

Colorado	DJ-10 120MB Int	\$190
	DJ-20 250MB Int	\$255
Trakker	120MB Printer port	\$355
	250MB Printer port	\$419

1320 S. California Blvd., Walnut Creek (Across from Cost Plus, next to Stroud's)

Monday-Saturday: 9:30-8:00, Sunday: 12:00-6:00

All prices are subject to change without notice.

Over 5,000 Software, Printers, Monitors, CD-ROM, Network Products, Computer Books, Magazines In Stock.

Task Switching And Multitasking —What's The Difference?

Excerpted From **Memory Management
And Multitasking Beyond 640K**

**BY LENNY
BAILES AND
JOHN
MUELLER**

If you own Microsoft's DOS 5 or Digital's DOS 6, you probably know that you can open more than one application at a time. However, only one application at a time can remain active. In other words, there is no background processing taking place (other than TSRs). The difference between a task switcher like DOSShell and a multitasker like DESQview or Windows is that a true multitasker allows other applications to execute tasks in the background. Background programs may be run "off-screen" or in small on-screen windows.

USING EXPANDED MEMORY WITH DESQVIEW

If you run Quarterdeck's DESQview, under some configurations it might report OK of expanded memory available for applications. Even if you have several megabytes of EMS installed on the system, DESQview can't use it for multitasking. As explained in the previous sections, the memory used to multitask

or EMS 4.0, to multitask about 640K. EEMS and EMS 4.0 provide the capabilities required to map expanded memory within the conventional memory area. EEMS and EMS 4.0 require almost the same hardware to multitask (EMS 4.0 provides more alternate register sets and some additional operating system level capabilities). Any memory card that delivers EEMS should be able to deliver EMS 4.0 with an appropriate software driver.

Even though DESQview (and other multitaskers) can't multitask programs in LIM 3.2 memory, the memory can be put to some good use for task switching. Task switching, again, is the trick of "freeze drying" one program to make room for another. When you task switch between two applications, one of them goes to sleep while the other is in use.

Let's say, for example, that you have a 500K program running under DESQview and attempt to start another 500K program. With LIM 3.2 memory, DESQview packs up the first program and sends it to the EMS area for storage. 500K of conventional memory is freed for DOS to run the second program. The first program is frozen. DOS can't run them both

because the first program wants to use the 500K all at once. EMS 3.2 can only feed information to DOS 64K at a time. When you want to switch back to the first program, the second program is swapped to EMS. The first program is reactivated at the point where it was frozen.

If there is no expanded memory at all on

continued on page 214

**a true multitasker
allows other
applications to
execute tasks in
the background.**

must be fully EMS 4.0 compatible. Any other type of expanded memory will not provide the support required for memory mapping.

You can verify the amount of expanded memory available in DESQview by opening its memory status utility. (Type "MS" from the DESQview menu.) If you find some expanded memory available in the "total memory" window but 0K in the "Largest Available" window, then your expanded memory can't be used for multitasking. You have LIM 3.2 memory hardware, or "software emulation" of EMS 4.0. Figure 4-3 shows what the memory status window would look like if your expanded memory can't be used for multitasking.

Quarterdeck's DESQview requires "hardware memory mapping," either EEMS



Fig. 4-4, 4-5

Whether your office has one computer or
one hundred....

We keep

you

working

→ **AUTHORIZED TECHNICAL SERVICES** has the experience *and* the expertise to handle your equipment service needs. Whether you're running one small office with one micro computer, or a statewide network of offices with a complex inventory of computers, video display terminals, printers and data communications devices—you simply cannot afford "down time". Call **ATS** today to find out just how easy it is to stay productive

 **ATS**
AUTHORIZED TECHNICAL SERVICES
1-800-451-4057

HERE'S A PARTIAL LIST OF EQUIPMENT WE SERVICE:
MICROCOMPUTERS: Dell, Epson, Advance Logic (ALR), AT&T, Everex, Leading Edge, AST Research, Compaq, IBM. **LOCAL AREA NETWORKS:** 3Com, Novell. **STORAGE DEVICES:** Iomega (Bernoulli). **DOT MATRIX PRINTERS:** Alps, Datasouth, Epson, NEC, Panasonic, Citizen, Texas Instruments, C. Itoh, Digital Equipment (DEC), IBM, Okidata, Printek, Toshiba. **PLOTTERS:** Hewlett-Packard, IBM. **THERMAL PRINTERS:** IBM, Texas Instruments, Panasonic. **LINE PRINTERS:** Data Products, Printronix. **LETTER QUALITY PRINTERS:** C. Itoh, Diablo, NEC Spinwriters. **LASER PRINTERS:** Canon, Epson, IBM, AST, TI, Hewlett-Packard. **VIDEO DISPLAY TERMINALS:** Digital Equipment (DEC), Link, Qume, Tab, Televideo, Wyse. **DATA COMMUNICATIONS:** Hayes.

ATS SERVICE CENTERS:
Los Angeles (310) 839-0020
Orange County (714) 937-0332
Oakland (510) 638-4449
Sacramento (916) 923-2944
San Jose (408) 970-9860

GOLDEN VALLEY SYSTEMS

Best Prices • Best Quality • Best Service
• Business Leasing Available

MONTHLY SPECIALS

•MAXTOR 200 MB SCSI Hard Disk Drive	\$389
•NOVELL Netware Lite V1.1 & Ethernet Card	\$150

LOCAL BUS MOTHERBOARD + VIDEO CARD

486DX-50 MHz/64K w/CPU	\$849*
486DX-33 MHz/64K w/CPU	\$579*
add \$40 for 256K Cache	

VESA LOCAL BUS

486DX2-66	\$1649
486DX-50	\$1559
486DX2-50	\$1499
486DX-33	\$1389

- Intel 80486DX CPU
- 128K Cache Memory
- AMI BIOS
- 4 MB RAM 70ns
- VESA IDE Controller
- 2 Serial/1 Parallel/1 Game
- 1.2 MB & 1.44 MB FDD
- 120 MB IDE Hard Drive
- 101 Enhanced Keyboard
- 14" 1024x768 .28dp SVGA
- 1 MB VESA SVGA 1280x1024
16M Colors w/Accelerator
- Mini-Tower or Desktop Case
- 200W Power Supply

OPTIONS

- Add \$30 for 256K Cache
- Add \$40 for Non-Interlaced Monitor
- Add \$90 for 200 MB Hard Drive

SUPER SALE

486DX2-66	\$1499
486DX-50	\$1399
486DX2-50	\$1859
486DX-33	\$1259

- Intel 80486DX CPU
- 128K Cache Memory
- AMI BIOS
- 4 MB RAM 70ns
- IDE Controller
- 2 Serial/1 Parallel/1 Game
- 1.2 MB and 1.44 MB FDD
- 120 MB IDE Hard Drive
- 101 Enhanced Keyboard
- 14" 1024x768 .28dp SVGA
- 512K SVGA Card
- Mini-Tower or Desktop Case
- 200W Power Supply

OPTIONS

- Add \$30 for 256K Cache
- Add \$40 for Non-Interlaced Monitor
- Add \$20 for 1 MB SVGA Card
- Add \$90 for 200 MB Hard Drive

SUPER SALE

486SX-25/0K	\$989
386DX-40/128K	\$789
386SX-33	\$899
386SX-25	\$879

- AMI BIOS
- 4 MB RAM 70ns
- IDE Controller
- 2 Serial/1 Parallel/1 Game
- 1.2 MB and 1.44 MB FDD
- 80 MB IDE Hard Drive
- 101 Enhanced Keyboard
- 14" 1024x768 .28dp SVGA
- 512K SVGA Card
- Mini-Tower or Desktop Case
- 200W Power Supply

OPTIONS

- Add \$40 for Non-Interlaced Monitor
- Add \$20 for 1 MB SVGA Card
- Add \$40 for 120 MB Hard Drive

NOTEBOOK COMPUTERS

486DX-33/4 MB RAM/120 MB HDD	\$2180
486DX-25/4 MB RAM/80 MB HDD	\$2080
486SX-25/4 MB RAM/80 MB HDD	\$1745
386SX-25/4 MB/80 MB HDD	\$1399
386SX-25/2 MB RAM/80 MB HDD	\$1199

FEATURES

- 1.44 MB Floppy Drive
- VGA 640x480 Resolution
- DOS 5.0
- Serial & Parallel Port
- Please Call For Details

*Due To Market Volatility, Please Call For Updated Prices

DRIVES

40 MB IDE Hard Drive	\$139
60 MB IDE Hard Drive	169
80 MB IDE Hard Drive	192
100 MB IDE Hard Drive	215
120 MB IDE Hard Drive	235
170 MB IDE Hard Drive	270
200 MB IDE Hard Drive	339
300 MB IDE Hard Drive	540
400 MB IDE Hard Drive	895
500 MB IDE Hard Drive	950

HARD FLOPPY DRIVE ADAPTERS

IDE 2FD/2 HD	\$13
IDE 2FD/2 HD w/ 2S/1P/1G	24
Ultrastor ESDI w/32K Cache (ISA)	145
Adaptec ESDI 1542KB w/kit (ISA)	274
Bustek SCSI/EISA	389

PRINTERS

Panasonic KX-P1180	\$154
Panasonic KX-P1123	198
Panasonic KX-P1124i	284
Panasonic KX-P1624	358
Cable for Printer	3

VIDEO CARDS AND MONITORS

Monographic Card w/Print Port (MGP)	\$11
VGA 256K (800x600, 16 bit)	32
VGA 512K (1024x768, 16 bit)	42
Trident 1 MB (1024x768/0256)	63
Diamond Stealth	219
Diamond Speed Star w/Hi-Color	139
Orchid IIs/Fahrenheit 1280 w/1 MB	225
Orchid ProDesigner IIs w/Hi-Color	143
Nanao 9080U (16", 1024x768, 0.28)	864
Nanao 9080i (16", 1280x1024, 0.28)	1028
NEC 3FGX (15", 1024x768, 0.28)	645
NEC 4FG (15", 1024x768, 0.28)	798
NEC 4DS (16" 1024x768, 0.28)	978
NEC 5FG (20", 1280x1024, 0.31)	1338
Sony CPD 1304 (14", 1024x768, 0.25)	579
Standard VGA (640x480) 0.51	189
Super VGA (1024x768) .39	229
Super VGA (1024x768) 0.28	258
Super VGA (1024x768, 0.28) Non-Int.	298
14" Mono w/MGP Card	108

MOTHERBOARD + CPU

486DX-50 MHz/64K EISA	\$939*
486DX-33 MHz/64K EISA	663*
486DX-50 MHz/64K ISA	629
486DX-33 MHz/64K ISA	435
486SX-20 MHz	189
386DX-40 MHz/64K	169
386SX-25 MHz	95

MISCELLANEOUS

AT I/O (2S/1P/1G)	\$11
Internal Modem 2400 Baud	39
FaxModem (9600 fax 2400 modem)	63
3-Button Mouse	12
Logitech Mouseman Serial (400dpi)	65
Logitech Mouseman Bus (400dpi)	72
Summit/Colorado Tape Back-Up	189
Baby AT/Mini Tower Case w/200W PS	59
Medium Tower Case w/200W PS.	95
Full Tower Case w/230W PS.	115
Car/DC-AC Inverter	85

1030 E. DUANE AVE. SUITE J
SUNNYVALE, CA 94086

(408) 738-4921
Fax: (408) 738-4924



< S.F.	HWY 101	S.J. >
AT&T	E. DUANE	Oakmead Pkwy.
	Fry's	
	Central Exp	

TERMS & CONDITIONS

- 1 year parts & labor warranty
- Prices & availability subject to change w/o notice
- Shipping, insurance and COD charges are additional & are non-refundable
- Return shipping must be insured and bearing a RMA # on the shipping label

5. Defective items replaced or repaired at our discretion
6. Not responsible for typographic errors
7. All returns are subject to 15% restocking fees and cover only computers excludes peripherals. Noreunds after 30 days
8. Government & Corporate Purchase orders are welcome

Hours: Mon-Fri 9-5:30
Sat 10-4

FileMaker Meets Hurricane Andrew

Data Processing In The Midst Of Disaster

BY CYNTHIA
JOHNSTON

The damage in Florida from Hurricane Andrew this past August was enormous. With a reported \$20 billion in public and private loss, 250,000 people left homeless, 86,000 people out of work and 90,000 homes damaged or destroyed, the monumental effort it would take to clean up, repair, and rebuild was obvious and overwhelming.

A less obvious, but necessary, part of the relief effort involved managing an equally

FileMaker Pro proved flexible enough to handle FEMA's requests for reports and modifications on-the-fly, unlike Paradox, which couldn't handle any changes at all. It was also easy to learn and use, allowing new staff members to pick up on it very quickly.

overwhelming mountain of paperwork—specifically, the applications for assistance filed by thousands upon thousands of people affected by the hurricane. Residents not covered by private insurance companies were eligible for up to \$11,500 in Federal Grants to cover immediate needs, and another \$10,000 to make their homes secure and livable. FEMA (the Federal Emergency Management Agency) set up eighteen neighborhood centers in the disaster area, and some 1,500 claims adjusters arrived from private insurance companies.

The flood of relief requests in the wake of the hurricane would be a shock to FEMA's information system. The hurricane relief database was going to be a monster.

GARBAGE IN, GARBAGE OUT

In the chaos and mass trauma following a disaster, there is enormous potential for things to go wrong in a database, and enormous limitation in what you can do about it afterwards. The garbage-in, garbage-out syndrome is multiplied by the sheer volume of data, aggravated by high-stress working conditions, and exacerbated by the physical and emotional state of people entering the data. Once in your database, garbage can quickly transform a small organizational problem into a huge one, so the trick is figuring out how to bozo-proof your system up front.

Enter Julie Bowers of Raindance Publishing, a San Rafael desktop and database publishing firm. Using the latest version of Claris' data management application, FileMaker Pro, Bowers creates custom databases for a variety of clients, from small businesses to major rock bands. She will be the first to tell you that there is *no* data management problem FileMaker can't handle.

Hired originally to go to Florida as a field inspector, Bowers brought her Outbound (a portable Apple-based notebook, comparable to a Macintosh IIfx in power), and an ImageWriter. She had already designed a FileMaker data entry screen to use in the field, based on the FEMA application form.

THE FLOW OF INFORMATION

Applications are the heart of FEMA's system.

The flow of information begins with people applying for financial aid, either at neighborhood disaster assistance centers, or by calling an 800 number. These applications contain the name of the applicant, the address of the damaged property, a description of the damage and signatures of the applicant and the FEMA field inspector processing the application.

From the disaster assistance centers, the original hand-written applications are trans-

ported to FEMA's field office headquarters, located in the old Eastern Airlines building near the Miami Airport, where hundreds of people, working on hundreds of computer terminals on a PC-based Gateway System, enter the data—application number, first and last name of applicant, date entered, etc.—into the FEMA database.

FEMA issues a work order number for each application it processes. A work order is, in effect, a purchase order for an inspection. Batches of twenty-five original applications are transmitted out to five field offices, operated by FEMA sub-contractors, for implementation. Attached to each batch is a computer-generated printout listing the application numbers and corresponding work order numbers contained in the batch. The field office enters those same numbers into a new database, and then sends inspectors out to the property, where they compare the damage to the description of it on the application.

Once the inspection is complete, the field office adds a transmittal number to the database for each completed work order, and generates a report on hard copy identifying the application numbers, work order numbers and transmittal numbers contained in the batches being transmitted back to FEMA with the original paperwork. Next, FEMA reviews the applications to verify that a work order had actually generated an on-site inspection, and that data from the inspection had been transmitted back to FEMA as completed work orders. Based on completed work order numbers, FEMA credits the field office for the work, and then the field office credits the field inspectors, thereby generating their paychecks.

PAPER CHASE

Normally FEMA provides the work order batches to the field office on computer disks, but this time the system was so overwhelmed that three days after the hurricane, it stopped supplying disks and sent computer-generated reports on hard copy, instead. The data furnished on these reports (application numbers, work order numbers, date received, etc.) would then be manually re-entered into the

5 Years Labor & 1 Year Parts Warranty On All Systems

Name Brand Quality - Satisfaction Guaranteed

BCS* A THE COMPUTER STORE YOU CAN COUNT ON

INTEL 486DX - 33/50/66 MHZ 64K Cache 120 MB HD

INTEL 486-33/50/66DX2 CPU
4Mb Ram 70 NS (UPTO 64Mb)
1.2FD & 1.44FD
64K CACHE (UP TO 256K CACHE)
125 MB IDE HARD DRIVE
SVGA MONITOR (1024X768 .28DP)
TRIDENT 8900 SVGA CARD W/1MB
2HD/2FD IDE CONTROLLER W/2S 1P 1G
101 ENCHANCED KEYBOARD

Complete System \$1539/\$1719/\$1819

386-33/40MHz SVGA 120MBHD Cache System

386-33DX/386-40DX
64k Cache (up to 256KB)
4MB RAM 70 ns (up to 32 MB)
Teac 1.2 Floppy Drive
Teac 1.44 Floppy Drive
125 MB IDE Hard Drive
Impression SVGA Monitor (1024x768 .28dp)
Trident 8900 SVGA Card W/1MB
2HD/2FD IDE Controller W/2S,1P,1G

Complete System \$1189/\$1219

*This month's
SPECIAL*

LOW PRICE !!!

MICROSOFT MOUSE	\$55
FULL PAGE SCANNER B/W	\$349
VI. IDE CONTROLLER	\$79
14.4 FAX AND MODEM	\$259
CHAPLET 386/25SX NOTEROOK	\$1,249
TRACKBALL	\$29
250 MB ARCHIVE/IRWIN TAPE BACKUP	\$229
MULTIMEDIA UPGRADE KIT W/7 TITLES	\$589
ETHERNET NE2000 NETWORK CARD	\$95

CALL FOR

NICE Motherboard (Made in U.S.A)
VESA Standard Local Bus Motherboard
Panasonic Printers
Hewlett Packard Printers
Spinnaker Eight-in-One Program
DESQ View 386

VESA LOCAL BUS 486-33/50/66 MHZ SYTEM

INTEL 486DX CPU
64k cache (up to 256k)
4MB Ram 70NS
(UP TO 32MB)
120MB IDE Hard
Drive 16MS
1.2FD o& 1.44FD
IDE Controller Card w/I/O card
Case W/ 230w PS
101 Enhanced keyboard

Complete System \$1139/\$1359/\$1479

MONITOR NOT INCLUDED

FREE!

Mouse with every system!

FREE!

*Software installation
with every system purchase*

386SX-16/25MHz System 40MB HD Monitor

1MB Ram
40MB IDE Hard Drive
Mono Monitor w/Card
1.2FD or 1.44FD
IDE 1:1 2FD/2HD
Controller
2 Serial, 1 Parallel,
1 Game Port
Quality Case / Power Supply
101 Enhanced Keyboard

Complete System \$655/679

Video Options

MGP Card	\$17
VGA Card 800x600/256K	\$39
TRIDENT 8900 1024x768/1M	\$75
Tseng Lab 1024x768/1M	\$99
PARADISE 1024X768/1M	\$99
ACMOSE ACCESALATOR W/1M	\$99
DIMOND 24X WD CHIP W/1M	\$179
DIMOND STEALTH W/1M	\$229
ATI ULTRA PRO W/2M	\$459
NCR GRAPHIC W/2M	\$159

Motherboard

486-33/50/66 DX	\$499/749/829
486-33/50/66DX LOCAL BUS	\$539/779/869
386-33/40 mhz/64k cache	\$189/209
386-16/25SX no cache	\$99/119

Monitors

14" Amber	\$105
SVGA 1024x768 0.28DP	\$285
SVGA 1024x768 0.28DPNI	\$309
15" SAMSUNG SYNMASTER	\$499
15" MAG15F 1280X1024 NI	\$589
15" NEC3FGX 1024X768	\$659
17" SAMSUNG 1280X1024	\$899
17" NANA0 1280X1024 NI	\$1,159
17" MAG 1280X1024 NI	\$1,129
17" VIEWSONIC 1280X1024	\$1,099

Hard Drive

40/80 MB HD	\$169/215
120/200 MB HD	\$269/349
340 MB HD	\$585

Case w/Power Supply

Mini Tower Case W/230W PS	\$65
Baby AT Case W/230W PS	\$69
Middle Tower Case W/230W PS	\$89
Big Tower Case W/230W PS	\$109
Black Case W/PS	LOW

Miscellaneous

101KB	\$24
101KB Maxiswitch	\$39
101KB Keytronic	\$49
Northgate Omni KB	\$75
1.2 Floppy Drive	\$58
1.44 Floppy Drive	\$49
Three Button Mouse	\$15
96/96/24 Fax/Modem	\$70
2400 Modem	\$45
Colorado Tape Backup 250 MB	\$249
Heat Sink with Fan	\$25

BCS* A Computers

8A Commercial Blvd Novato CA 94949
☎: (415)883-7392 Fax: (415)883-8104
Hours: M-F 10:00am to 6:00pm
Sat 11:00am to 4:00pm

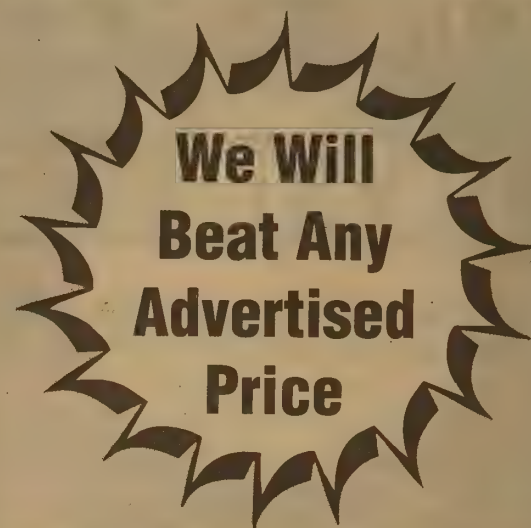
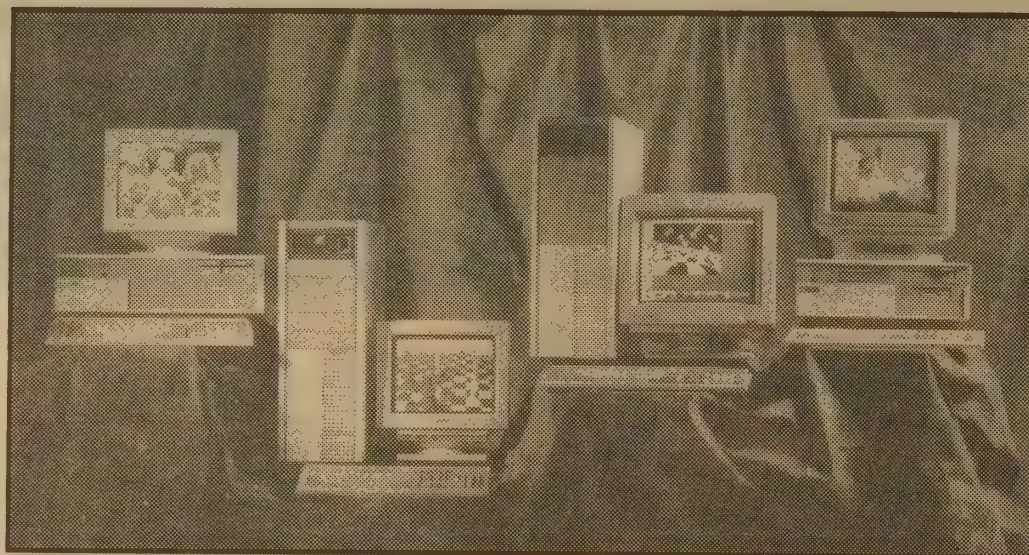
* Dealer Inquiries Welcome
* Volume Discount Available

Price subject to change without notice
Not responsible for typographical error
Trademarks are registered by the
respective companies



101 north →





386SX40Mhz

- ▲ AMD 386-40SX™ CPU
- ▲ with 16Kb cache
- ▲ 2Mb RAM Installed
- ▲ 1.2Mb Floppy Drives
- ▲ 1.44Mb Floppy Drive
- ▲ 60Mb Hard Disk IDE
- ▲ Super VGA Card 16-bit w/ 512Kb
- ▲ 14" Super VGA Color Monitor (1024x768) KFC
- ▲ IDE Controller 2HD & 2FD w/ 2S, 1P, 1G Port
- ▲ 101 Keys Keyboard
- ▲ Baby AT Case w/ 200 W.P.S
- ▲ Free 3-Buttons Mouse

\$848

386DX40Mhz

- ▲ AMD 386-40DX™ CPU
- ▲ with 64Kb cache
- ▲ 4Mb RAM Installed
- ▲ 1.2Mb Floppy Drives
- ▲ 1.44Mb Floppy Drive
- ▲ 130Mb Hard Disk 15ms
- ▲ Super VGA Card 16-bit w/ 512Kb
- ▲ 14" Super VGA Color Monitor (1024x768) KFC
- ▲ IDE Controller 2HD & 2FD w/ 2S, 1P, 1G Port
- ▲ 101 Keys Keyboard
- ▲ Baby AT Case w/ 200 W.P.S
- ▲ Free Real Microsoft Mouse

\$998

486SX-25Mhz

- ▲ Intel 486-25SX™ CPU
- ▲ with 8Kb cache
- ▲ 4Mb RAM Installed
- ▲ 1.2Mb Floppy Drives
- ▲ 1.44Mb Floppy Drive
- ▲ 130Mb Hard Disk 15ms
- ▲ Super VGA Card 16-bit w/ 512Kb
- ▲ 14" Super VGA Color Monitor (1024x768) KFC
- ▲ IDE Controller 2HD & 2FD w/ 2S, 1P, 1G Port
- ▲ 101 Keys Keyboard
- ▲ Baby AT Case w/ 200 W.P.S
- ▲ Free Real Microsoft Mouse

\$1048

486DX50Mhz

- ▲ Intel 486-50DX™ CPU
- ▲ with 64Kb cache
- ▲ 4Mb RAM Installed
- ▲ 1.2Mb Floppy Drives
- ▲ 1.44Mb Floppy Drive
- ▲ 130Mb Hard Disk 15ms
- ▲ Super VGA Card 16-bit w/ 512Kb
- ▲ 14" Super VGA Color Monitor (1024x768) KFC
- ▲ IDE Controller 2HD & 2FD w/ 2S, 1P, 1G Port
- ▲ 101 Keys Keyboard
- ▲ Baby AT Case w/ 200 W.P.S
- ▲ Free Real Microsoft Mouse

\$1428

486DX2-66MHz

- ▲ Intel 486-66DX2™ CPU
- ▲ with 64Kb cache
- ▲ 4Mb RAM Installed
- ▲ 1.2Mb Floppy Drives
- ▲ 1.44Mb Floppy Drive
- ▲ 130Mb Hard Disk 15ms
- ▲ Super VGA Card 16-bit w/ 512Kb
- ▲ 14" Super VGA Color Monitor (1024x768) KFC
- ▲ IDE Controller 2HD & 2FD w/ 2S, 1P, 1G Port
- ▲ 101 Keys Keyboard
- ▲ Baby AT Case w/ 200 W.P.S
- ▲ Free Real Microsoft Mouse

\$1528

Vesa Local 486

- ▲ Intel 486-33DX™ CPU
- ▲ with 128Kb cache
- ▲ 4Mb RAM Installed
- ▲ 1.2Mb Floppy Drives
- ▲ 1.44Mb Floppy Drive
- ▲ 130Mb Hard Disk 15ms
- ▲ Vesa Local Windows Accelerator w/ 1Mb
- ▲ 14" Super VGA Color Monitor (1024x768) KFC
- ▲ IDE Controller 2HD & 2FD w/ 2S, 1P, 1G Port
- ▲ 101 Keys Keyboard
- ▲ Baby AT Case w/ 200 W.P.S
- ▲ Free Real Microsoft Mouse

\$1378

Call Pixel USA BBS, 929-6981, 8N1, 4 lines, FREE access.

MOTHERBOARD w/CPU

- Mb 386sx25MHz \$85
- MB Opti 386sx40MHz w/ 16Kb Cache \$135
- MB Opti 386DX-25MHz \$135
- MB 386-40MHz w/ 64K Cache \$156
- MB 486sx25MHz w/ 8K Cache \$218
- MB 486-33MHz w/ 64K Cache (Cyril CPU) \$278
- MB 486-33MHz w/ 64K Cache (Intel CPU) \$423
- MB 486DX2-50MHz w/ 64K Cache \$533
- MB 486DX-50MHz w/ 64K Cache \$583
- MB 486DX2-66MHz w/ 64Kb \$678
- MB Opti 386-40MHz w/ 64Kb \$178
- MB Opti 486-33MHz w/ 128Kb \$453
- MB Opti 486DX2-50MHz w/ 128K \$563
- MB Opti 486DX-50MHz w/ 128K \$613
- MB Opti 486DX2-66MHz w/ 128K \$698
- MB Vesa Local Bus 486SX-25MHz w/ 128K \$308
- MB Vesa Local Bus 486DX-33MHz w/ 128K \$458
- MB Vesa Local Bus 486DX2-50MHz w/ 128K \$573
- MB Vesa Local Bus 486DX-50MHz w/ 128K \$608
- MB Vesa Local Bus 486DX2-66MHz w/ 128K \$718
- MB Orchid Vesa Local 486 \$Call

INTERFACE CARDS

- IDE Controller 2HD & 2FD \$13
- IDE Controller 2HD & 2FD (2s, 1p, 1g) \$17
- IDE Caching Controller < 0.3ms Fast \$145
- Orchid VLB IDE Controller 2HD & 2FD (32-bit) \$Call
- DTC 16-bit SCSI Controller \$95
- Adaptec 1522BK SCSI \$155
- Adaptec 1542BK SCSI \$248
- Other \$Call

HARD DISK & FLOPPY DRIVE

- 60Mb IDE \$165
- 85Mb 18ms IDE \$178
- 105Mb 18ms IDE \$208
- 120Mb 18ms IDE (Conner) \$228
- 130Mb 15ms IDE (Maxtor 7120A) \$238
- 170Mb 17ms IDE (Conner CP3017E) \$295
- 213Mb 14ms IDE (WD Caviar 2200) \$328
- 213Mb 15ms IDE (Maxtor 7213A) \$338
- 240Mb Fast IDE w/ 256K Cache (Quantum) \$398
- 340Mb 12ms IDE (WD Caviar 2340) \$538
- 525Mb 12ms IDE (Fujitsu 2624T) \$875
- 213Mb 15ms SCSI (Maxtor 7213S) \$395
- 340Mb 15ms SCSI (Maxtor LXT340SY) \$575
- 525Mb Fast SCSI (Quantum w/ System Only) \$845
- 520Mb 12ms SCSI (Fujitsu) \$908
- 877Mb SCSI-2 (Toshiba) \$1068
- 1.2GB Wren 7 14ms SCSI (Seagate) \$1295
- 1.2GB Panther 13ms SCSI (Maxtor) \$1295
- 1.2GB 14ms SCSI (Fujitsu) \$1295
- 1.7Gb 11ms SCSI-2 (Maxtor) \$1578
- 2.0Gb 11ms SCSI-2 (Fujitsu) \$Call
- 1.2Mb Floppy Drive (TEAC) \$55
- 1.44Mb Floppy Drive (TEAC) w/ Bracket \$55
- Other \$Call

KEYBOARDS

- Keyboard 101 (BTC) \$20
- Keyboard 101 MNB Click \$45
- Keyboard Keytronic \$36
- Keyboard Northgate 102 \$75
- Keyboard Northgate Ultra \$95

MONITOR

- 14" KFC (1024x768) .39mm Interlaced \$215
- 14" FKC (1024x768) .28mm Interlaced \$255
- 14" KFC (1024x768) .28mm Non-Interlaced \$295
- 14" Acer (1024x768) .28mm Interlaced \$275
- 14" Acer (1024x768) .28mm Non-Interlaced \$315
- 14" ViewSonic 6E \$345
- 14" ViewSonic 5+ \$485
- 14" Club AT (1024x768) .28mm Interlaced \$320
- 14" Club AT (1024x768) .28mm Non-Interlaced \$370
- 15" SAMPO Alpha Scan KDM-1566 \$485
- 15" ViewSonic 6FS \$595
- 16" Nanao 9080I \$898
- 17" Sampo KDM-1766 \$745
- 17" Nanao F550I Flatscreen \$Best Price Call
- 20" Sampo KDM-2055 \$1195
- Other \$Call

SVGA CARD

- MGP Card \$15
- SVGA Card w/ 512Kb or 1Mb \$36 / \$56
- TsengLab Hi-Color SVGA Card w/ 1Mb \$85
- S3 Windows Accelerator w/ 1Mb \$115
- Pixel Turbo (TsengLab) Fx-Hicolor w/ 1Mb \$98
- Cirrus Logic True Color w/ 1Mb \$75
- Pixel True Color w/ 1Mb w/ 2FD & 2HD 2s, 1p Port \$98
- Diamond Stealth Vram Hi-Color w/ 1Mb \$199
- TsengLab Vesa Local Bus SVGA Card w/ 1Mb \$115
- Genoa 8500 Vesa Local Bus SVGA Card w/ 1Mb \$135
- Orchid Vesa Local Bus Fahrenheit w/ 1Mb \$165
- Diamond Vesa Local Bus Stealth 24 w/ 1Mb \$175
- ATI Graphic Ultra Pro 1Mb (Vesa Local Bus) \$355

ACCESSORIES

- Modem 2400 Baud Rate \$38
- Modem 2400 & Fax 9600 (Send & Received) \$58
- Modem 14,400 V.32 & V.42 & Fax 14,400 \$205
- Sound Blaster \$88
- Sound Blaster Pro Basic \$148
- Sound Blaster Pro \$195
- Creative Labs Multimedia Upgrade Kit \$525
- Microsoft Mouse Compatible \$14.95
- Real Microsoft Mouse Serial \$45
- Logitech First Mouse \$35
- Colorado 120Mb Tape Back-up \$188
- Colorado 250Mb tape Back-up \$248
- Super Math 387sx25MHz w/ System \$35
- ULSI 387-40MHz \$85
- CPU cooling kit w/ heatsink and fan \$20
- Windows 3.1 or MS-DOS 5.0 (OEM) \$35
- Mini Desktop Case + Power Supply 200W \$55
- Mini Tower Case + Power Supply 200W \$55
- Medium Tower Case + Power Supply 230W \$85
- Full Size Tower Case + Power Supply 250W \$99
- Power Center \$19
- Keyboard Drawer (under table) \$18
- Keyboard Drawer w/ Power Center \$45
- Microsoft Bus Mouse \$Call
- Amplified Speaker System for Sound Card \$19.95
- Panasonic 1180 Printer \$155
- Panasonic 1123 Printer \$198
- Citizen GSX230 \$258
- Color Option Kit \$48
- Mouse Pad \$1.95
- Disketts Holder For 5 1.4 or 3 1/2 \$6.95
- Other \$Call

BUY DIRECT SAVE FROM FACTORY & SAVE

HIGHEST QUALITY IN PERFORMANCE AND
GUARANTEED LOW PRICES

486DX33Mhz

- ▲ **Cyrix 486DLC-33™ CPU**
- ▲ w/ 64Kb & Math 387-33
- ▲ 4Mb RAM Installed
- ▲ 1.2Mb Floppy Drives
- ▲ 1.44Mb Floppy Drive
- ▲ 130Mb Hard Disk 15ms
- ▲ Super VGA Card 16-bit w/ 512Kb
- ▲ 14" Super VGA Color Monitor (1024x768) KFC
- ▲ IDE Controller 2HD & 2FD w/ 2S, 1P, 1G Port
- ▲ 101 Keys Keyboard
- ▲ Baby AT Case w/ 200 W.P.S
- ▲ **Free Real Microsoft Mouse**

\$1118

486DX33Mhz

- ▲ **Intel 486-33DX™ CPU**
- ▲ with 64Kb cache
- ▲ 4Mb RAM Installed
- ▲ 1.2Mb Floppy Drives
- ▲ 1.44Mb Floppy Drive
- ▲ 130Mb Hard Disk 15ms
- ▲ Super VGA Card 16-bit w/ 512Kb
- ▲ 14" Super VGA Color Monitor (1024x768) KFC
- ▲ IDE Controller 2HD & 2FD w/ 2S, 1P, 1G Port
- ▲ 101 Keys Keyboard
- ▲ Baby AT Case w/ 200 W.P.S
- ▲ **Free Real Microsoft Mouse**

\$1268

486DX2-50Mhz

- ▲ **Intel 486-50DX2™ CPU**
- ▲ with 64Kb cache
- ▲ 4Mb RAM Installed
- ▲ 1.2Mb Floppy Drives
- ▲ 1.44Mb Floppy Drive
- ▲ 130Mb Hard Disk 15ms
- ▲ Super VGA Card 16-bit w/ 512Kb
- ▲ 14" Super VGA Color Monitor (1024x768) KFC
- ▲ IDE Controller 2HD & 2FD w/ 2S, 1P, 1G Port
- ▲ 101 Keys Keyboard
- ▲ Baby AT Case w/ 200 W.P.S
- ▲ **Free Real Microsoft Mouse**

\$1378

Vesa Local 486

- ▲ **Intel 486-50DX2™ CPU**
- ▲ with 128Kb cache
- ▲ 4Mb RAM Installed
- ▲ 1.2Mb Floppy Drives
- ▲ 1.44Mb Floppy Drive
- ▲ 130Mb Hard Disk 15ms
- ▲ **Vesa Local Windows Accelerator w/ 1Mb**
- ▲ 14" Super VGA Color Monitor (1024x768) KFC
- ▲ IDE Controller 2HD & 2FD w/ 2S, 1P, 1G Port
- ▲ 101 Keys Keyboard
- ▲ Baby AT Case w/ 200 W.P.S
- ▲ **Free Real Microsoft Mouse**

\$1488

Vesa Local 486

- ▲ **Intel 486-50DX2™ CPU**
- ▲ with 128Kb cache
- ▲ 4Mb RAM Installed
- ▲ 1.2Mb Floppy Drives
- ▲ 1.44Mb Floppy Drive
- ▲ 130Mb Hard Disk 15ms
- ▲ **Vesa Local Windows Accelerator w/ 1Mb**
- ▲ 14" Super VGA Color Monitor (1024x768) KFC
- ▲ IDE Controller 2HD & 2FD w/ 2S, 1P, 1G Port
- ▲ 101 Keys Keyboard
- ▲ Baby AT Case w/ 200 W.P.S
- ▲ **Free Real Microsoft Mouse**

\$1528

Vesa Local 486

- ▲ **Intel 486-66DX2™ CPU**
- ▲ with 128Kb cache
- ▲ 4Mb RAM Installed
- ▲ 1.2Mb Floppy Drives
- ▲ 1.44Mb Floppy Drive
- ▲ 130Mb Hard Disk 15ms
- ▲ **Vesa Local Windows Accelerator w/ 1Mb**
- ▲ 14" Super VGA Color Monitor (1024x768) KFC
- ▲ IDE Controller 2HD & 2FD w/ 2S, 1P, 1G Ports
- ▲ 101 Keys Keyboard
- ▲ Baby AT Case w/ 200 W.P.S
- ▲ **Free Real Microsoft Mouse**

\$1628

80486, 80386, 80386sx are trade marks of Intel. All other products and brand names are trademarks of their respective companies. All prices are subject to change without notice.

SAVE 3% ON CASH PURCHASE

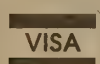
One Year Warranty Parts & Labor On Systems

- ☐ **Customize Configuration Available**
- ☐ **Excellent Customer Service and Technical Support**
- ☐ **24 Hours Turn-Around Time On Service**
- ☐ **All Systems Are Burned-In and Tested for 72 Hours**

Office Hours: Mon - Fri : 9:30 am - 7:00 pm • Sat.: 10:00 am - 6:00 pm



1937 Tully Road • San Jose, CA 95122



(408) 929-7218

Fax: (408) 929-7244



PIXELUS.A

field office database. Under this extremely inefficient system, data entry would have to be done in the field office, where Bowers and the field office staff were already inundated with paperwork and working eighteen-hour days.

When Bowers arrived in Miami, the crew was working out of a hotel suite with a single computer, a transportable—i.e. too big and heavy to call portable—IBM lunchbox style PC, running a custom Paradox database. The problems with Paradox mounted quickly: You couldn't see what you were doing or what you had done, so if you lost your place you had no way of knowing where you'd left off; worse,

In a disaster, the garbage-in, garbage-out syndrome is multiplied by the sheer volume of data, aggravated by high-stress working conditions, and exacerbated by the physical and emotional state of people entering the data.

the program accepted duplicate postings. Interruptions in the field office were frequent enough (the inspection team grew from five to one hundred sixteen) to cause many errors under this system. When FEMA requested that reports be generated a certain way, the Paradox programmer answered, "If you'd told me this two months ago, I could have done it." The crew wound up having to type the transmittal reports in ProWrite, a word-processing application on the IBM.

After a week and a half of this, they finally just shoved IBM-cum-Paradox into a corner and started over. Bowers switched the entire project onto her Outbound, using the FileMaker database she had designed for use in the field. The Outbound did a great job, using an extended keyboard for data entry, and the ImageWriter to print out transmittals to send to FEMA.

By this time, Bowers had become department manager and had hired a staff. As it was tough to find people in Miami who knew Macintosh, she trained approximately twenty

new staff members, some of whom became trainers themselves. Perhaps most importantly, she was given a budget for new computers for the field office system. She purchased a Macintosh IIsi plus 9Mb of RAM, a Macintosh Classic II, an Outbound notebook like her own, and an Apple Personal Laser Printer, then networked them all together, using the IIsi as a server so everyone was working on the same database.

"We tied everything together, and in three weeks we were no longer transporting floppies by hand," she recalls. "We were using the network so that there was no loss, eliminating another margin of error. Every minute, it was 'how do we get rid of another margin of error?'"

Also, they achieved limited cross-platform capability. One of the inspectors had a Packard Bell 486; by hand-carrying floppies back and forth and using Apple File Exchange, the PC compatible was integrated into the system without bothering with all the expensive add-ons and upgrades (SCSI ports, phone connector ports, etc.) it would take to connect it to the network. In addition to handling its share of the the disaster database, the Packard Bell 486 also generated the field office payroll—using FileMaker Pro 2.0 for Windows.

THE MOTHER OF ALL BETA TESTS

As luck would have it, Bowers happened to be beta testing the new Windows software for Claris Corporation at the time, and had the soon-to-be released FileMaker Pro 2.0 for Windows with her, in addition to the latest version for the Mac. This completed the loop. All of the computers were functioning together on a network using FileMaker Pro 2.0, printing out reports on both the ImageWriter and the Personal LaserWriter.

The network system performed extremely well using FileMaker, processing some 16,000 applications in the four weeks after the switch. After that, they processed 300-600 applications or work orders ("in-and-outs" as they called them) every day, and everything worked perfectly.

In disaster management, a system must be put to work with a minimum of set-up, training, and support, and with a minimal possibility for error; at the same time, it must be flexible. FileMaker Pro proved flexible enough to handle FEMA's requests for reports and modifications on-the-fly, unlike Paradox, which couldn't handle any changes at all. It was also easy to learn and use, allowing new staff members to pick up on it very quickly.

One feature that sets FileMaker well apart from other database programs is its report-generating capability, according to Bowers.

"You can generate any kind of report you want. You can have it make calculations or summaries, count totals, figure percentages, commissions, it can catch duplicates, generate letters, invoices, purchase orders, mailing labels, and lists... You can include logos, photos, drawings, even animation. You can design the layout any way you want, without limits. You start out with a blank sheet of paper, and once you have created a format, you can change it as easily as you change your mind. If you have a problem figuring something out, technical support is right there. Claris' Tech Support was with me, by phone, every step of the way," she says, "helping resolve any issue I encountered."

TAKING OUT THE GARBAGE

Once a system is in place, controls, methods and procedures must be instituted and carefully followed in order to prevent the entry of bad data. But in the case of Hurricane Andrew, the horse was already out of the barn, with over two weeks' worth of garbage in the database, and a complete change in system.

The hurricane database focused on application numbers, which in a perfect world would be unique. But the nightmare was further compounded by the fact that the government press had issued packets with duplicate application numbers, never thinking they would all be used in a single disaster. To make matters worse, somewhere in the process, FEMA was catching the duplicate application numbers and changing them in their system, without telling the field office. Since the inspectors' paychecks were based on application numbers, this made reconciling the payroll very difficult. Procedures were not always followed, and some of the inspectors would forget to put their names on applications they had processed.

A number system was instituted to help identify each inspector's work. This also saved data entry people from having to decipher handwriting, which became more important as the inspection team expanded from five to more than a hundred.

FEMA was trying to get relief checks out to people as quickly as possible, but it was terribly hard to contact many of them. They had no phones and weren't getting to the assistance centers or to public phones to call the hotlines, so inspectors were sent out into the streets to look for them, often in areas with no street signs, no house numbers (no houses!), and no landmarks.

Inspectors began making inspections at the same time that they did the applications, bypassing FEMA's database and the procedure of processing applications and issuing work orders for the inspectors. Throw in a fat supply of duplicate application numbers that

Lowest price for USA VESA Local Bus

Made in USA, 3 Vesa Local Bus Slot Basic System

AIR EISA 486DX-50 W/ 256K Cache **1230**

Made in USA, 3 Vesa Local Bus Slot Basic

AIR ISA 486DX-50 W/ 256K Cache **960**

Made in USA, 2 Vesa Local Bus Slot Basic

ORCHID 486DX2-66 W/ 256K Cache **1140**

Made in USA, 2 Vesa Local Bus Slot Basic

ORCHID 486DX-50 W/ 256K Cache **1030**

Made in USA, 2 VL Local Bus Slot Basic

ORCHID 486DX-33 W/ 256K Cache **840**

Made in USA, Basic System with 1 MB

BAY 486DX-50 W/64K Cache **850**

Made in USA, Basic System with 1 MB

BAY 486DX-33 W/64K Cache **650**

Landmark 64 MHz, Basic System with 1 MB

BAY 386DX-40 W/128K Cache **360**

Landmark 53 MHz, Basic System with 1 MB

BAY 386DX-33 W/128K Cache **340**

Landmark 33 Mhz, Basic System with 1 MB

BAY 386DX-25 MHZ **315**

Landmark 33 Mhz, Basic system w/ 1MB

BAY 386SX-25 MHZ **285**

486 • 386 • 386SX

BASIC SYSTEM INCLUDE

MotherBoard & CPU

1MB of Memory • 1.2MB or 1.44MB Floppy Drive

Multi I/O 2s/1p/1g • Desktop or Mini Tower + P.S.

1:1 2HD / 2FD Controller • 101 Enhanced KeyBoard

All 486 Systems, we used INTEL not CYRIX CPU.

* Authorized Dealer of Orchid Technology, AIR, Dash Computer.

HARD DISKS (CONNER, MAXTOR, QUATUM)

40 MB IDE (28ms)	\$165
100MB IDE (18ms)	\$240
120 MB IDE (16ms)	\$250
213 MB IDE (16ms)	\$350
240 MB IDEw/256 K Cache	\$450
340 MB IDE (15ms)	\$595
520 MB IDE (13ms)	\$895

VIDEO CARDS ISA BUS

VGA (16 BIT, 800X600)	\$40
Trident VGA, 1MB	\$60
ProDesigner IIs Sierra DAC (32 K Color)	\$145
Diamond Stealth VRAM S3 1MB ISA	\$210
Orchid Fahrenheit 1280/VA (16.7 Millions)	\$175

VESA LOCAL BUS PERIPHERALS VLB

AIR SCSI Local Bus SCSI-2	\$320.00
Diamond Stealth VLB S3 SVGA 1MB	\$165.00
CIRRUS LOGIC VLB SVGA 16.7 Millions	\$145.00
ORCHID IDE VL 2HD/2FD	\$ 70.00
ORCHID FAHRENHEIT 1280 VLB 1MB	\$170.00
ATI GRAPHIC ULTRA PRO 2MB	\$475.00
ORCHID 486 VLB w/256K 33/50 MHz	\$295/345
AIR 486 VLB w/256K 33/50 MHz (w/o CPU)	\$240/250
Diamond 486 VLB w/256k 33/50MHz	\$320/350
Genoa VLB SVG w/1MB	\$170.00
UltraStor SCSI-2 VLB 32k cache Buffer	\$295.00
AIR IIT VLB SVGA Card 2MB	\$CALL
ORCHID Celsius 9000 VLB 2MB	\$CALL
Diamond Stealth VLB Viper 2MB	\$CALL

MONITORS

SuperVGA (1024x768,0.39mm)	\$240
SuperVGA (1024x768,0.28mm)	\$270
SuperVGA (1024X768, Non-int)	\$320
NEC 3FGX 15" Flat Screen	\$650
NEC 4FG 15" Flat Screen	\$750
SONY 1304s .25 non-int	\$570
MAG 15"/17" Monitor	\$580/1190
Nanao F550I 17" PC Mag Editor Choice	\$1080

PRINTERS

Panasonic KX-1180i	\$160
Panasonic KX-2123	\$240
Deskjet 500/500C/550C	\$395/519/719
HP IIP+/IIP/IV	\$795/995/1395

MISCELLANEOUS

HiRes Mouse 400 DPI	\$20
AIR SCSI Local Bus Controller	\$320
DTC 16 Bit SCSI Controller	\$135
SCSI Adaptec 1522 HD/FD	\$120
SCSI Adaptec 1542 B w/o kit	\$225
9600B/2400B FAX/ Modem	\$60
Scanner 600 Dpi w/ Photo Styler	\$1290
Dual Floppy 1.2&1.44 Drive	\$145
Logitech MouseMan Serial	\$65
Creative Lab Multimedia + CD + 6 softwares	\$510
Fusion CD 16 Sound + CD ROM	\$520
Tape Back-Up Drive 120/250	\$195/265
Sound Blaster Pro Basic	\$159

ORCHID + AIR VESA LOCAL BUS SYSTEMS

**ORCHID VLB 486-33
W/ 256K CACHE
MED-TOWER SYSTEM**

**ORCHID VLB 486-50
W/ 256K CACHE
MED-TOWER SYSTEM**

**ORCHID 486DX2-66
W/ 256K CACHE
MED-TOWER SYSTEM**

1.2 & 1.44 + Mouse + 4MB + FAHRENHEIT VLB 1280 SVGA + 213MB + IDE VL BUS

\$1,630

\$1,820

\$1,930

**AIR VLB 486-33
W/ 256K CACHE
MED-TOWER SYSTEM**

**AIR VLB 486-50
W/ 256K CACHE
MED-TOWER SYSTEM**

**AIR VLB 486DX2-66
W/ 256K CACHE
MED-TOWER SYSTEM**

1.2 & 1.44 + Mouse + 4MB + FAHRENHEIT VLB 1280 + MAXTOR 213MB + IDE VL BUS

\$1,510

\$1,750

\$1,860

**BAY 486DX-33
W/ 64K CACHE
MINI-TOWER SYSTEM**

**BAY 486DX-50
W/ 64K CACHE
MINI-TOWER SYSTEM**

**BAY 486DX2-66
W/ 64K CACHE
MINI-TOWER SYSTEM**

1.2 & 1.44 + Mouse + 4MB + TRIDENT 1MB + SVGA .28 MONITOR + 130 MB HD

\$1,430

\$1,630

\$1,730

BAYCOMPUTER, INC.



1252 So. Abel Street, • Milpitas, CA 95035

Tel: (408) 956-8014 • Fax: (408) 956-8013



Store Hours: Mon - Fri: 9:30AM - 6:30PM • Sat: 10:00AM - 5:00PM

Design by: AT GRAPHICS (408) 956-9691

Why
ACCESS?

EXPERIENCE QUALITY, A Leader In Performance Systems



**-5 Years of
Business
Experience**

**-\$3 Million in
Inventory**

**-Located in the
Heart of
Silicon Valley**

**-Over 2,000 Line
Items to
Choose From**

**-Well-Stocked
18,000 sq. ft.
Showroom**

**-Factory Trained
Technical Staff**

**-Authorized Sales
& Service for Most
National Name
Brand Products**

**-Extended Warranty
Available**

**STORE
HOURS**

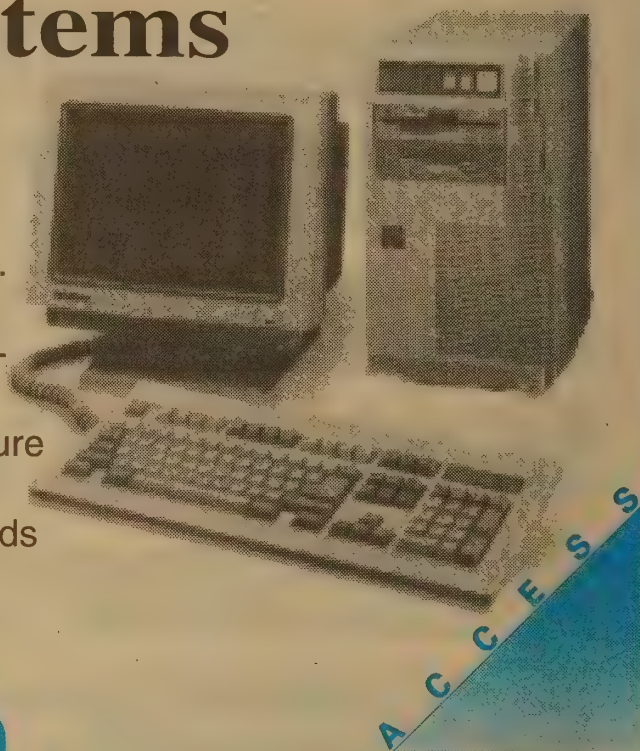
M-F 9-8

**SAT-SUN 10-5
(Pacific Time)**

The Powerful Desktop **ACCESS** Systems

ACCESS' high-speed machines provide exceptional performance and flexibility for long-term business needs. Delivers multitasking capabilities for easy handling of simultaneous applications.

And above all, ACCESS systems feature top quality materials, construction, reliability and support to meet the standards of the most demanding customers.



ACCESS 386DX-33

\$1019

- Conner 80MB HDD • Video 7 VGA 256K Card
- Impression 1439 14" SVGA Monitor
- Deluxe Desktop or Mini Tower

ACCESS 386DX-40

\$1049

- Conner 80MB HDD • Video 7 VGA 256K Card
- Impression 1439 14" SVGA Monitor
- Deluxe Desktop or Mini Tower

ACCESS 486DX-33

\$1539

- Conner 120MB HDD • Trident SVGA 1MB Card
- Impression 1428 14" SVGA Monitor
- Deluxe Desktop or Mini Tower

ACCESS 486DX-50

\$1799

- Conner 120MB HDD • Trident SVGA 1MB Card
- Impression 1428 14" SVGA Monitor
- Deluxe Desktop or Mini Tower

All High Performance Systems Feature:

- Motherboard w/CPU
- 64K Cache expandable to 256K (256K Cache on 486/50MHz)
- 4MB RAM expandable to 32MB
- 5.25" 1.2MB & 3.5" 1.44MB FDD
- IDE hard/floppy disk controller
- Serial/parallel/game ports
- Math coprocessor socket
- Real-Time clock/calendar
- 101 enhanced key keyboard
- MS-DOS 5.0
- 72 hour extensive testing
- 1-year parts & labor warranty

*Featured in
Computer Shoppers
"Incredible 486 Deals"
January '93!*

**Sales
Hotline**

408-247-4444

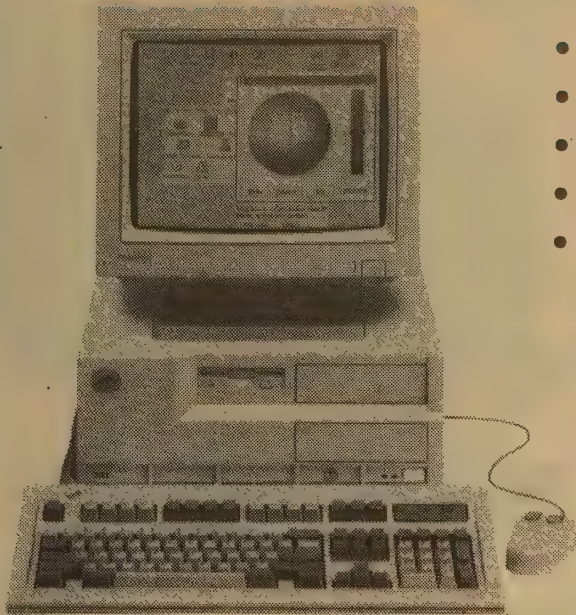
Technical Support 408-247-4990 Fax 408-247-4448

Not responsible for typos / Price subject to change w/o notice / Price good thru 3/7/93

SERVICE AND MORE...

And Peripherals Since 1987.

IBM



Monitor not included

PS/ValuePoint 433DX 486DX/33MHz System

An Authorized
IBM Reseller!

- 33MHz IBM 486DX w/ Cache
- Five expansion slots
- ISA architecture
- IBM mouse
- One-year onsite warranty/HelpWare Line
- 4MB RAM exp. to 32MB
- 1.44MB 3.5" Floppy drive
- Intergrated SVGA card
- Norton Antivirus 2.1

\$1329

SVGA .28mm Monitors

14" 6312 Low Radiation	\$399
14" 6314 Digital Display	529
15" 6319 Flat Screen	649

386SLC25 2MB 80 MB HDD	\$980
386SLC25 2MB 170MB HDD	1178
486SX25 8MB 80 MB HDD	1260
486SX25 8MB 170MB HDD	1480

EPSON®

WHEN YOU'VE GOT AN EPSON,
YOU'VE GOT A LOT OF COMPANY™

An Authorized
EPSON Reseller!



*Certain Restrictions Apply

Name Brand...At A Clone Price!

Equity 386SX-16Plus

- 16MHz 386SX
- 3.5" or 5.25" FDD
- Intergrated SVGA card
- 101 key keyboard
- 2MB RAM exp. to 14MB
- 14" Color SVGA Monitor
- 40MB Hard Drive
- One-year onsite warranty

\$649

Options:

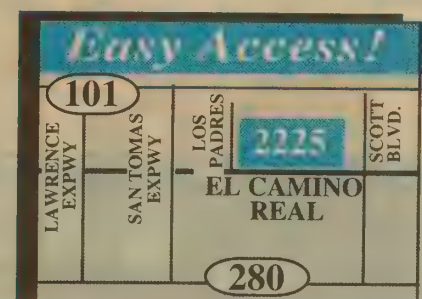
	Add
• DOS 5.0	49
• Windows 3.1	59

CALL US! Other Models Available.

ACCESS

COMPUTER TECHNOLOGIES

2225 EL CAMINO REAL SANTA CLARA, CA 95050



ACCESS THE BEST

Catch The Local Bus!

VLB-VESA Local Bus 486-33MHz



Featuring a GENOA motherboard

- 4MB RAM exp. to 32MB on-board
- ORCHID VLB Fahrenheit VGA card
- 101-key enhanced keyboard
- VLB IDE Controller
- 1.2MB, 5.25" floppy disk drive
- 256K Cache memory
- 2 serial, 1 parallel and 1 game port
- CONNER 170MB, 15ms hard drive
- Viewsonic 6E Non-Interlaced monitor
- Deluxe medium tower case



\$1999



SUPERBOARD 486 VLB

The Local Bus motherboard that delivers unsurpassed power w/ 256K Cache

two 32-bit Local Bus slots for high performance video or IDE controller • six 16-bit AT expansion slots • up to 32MB on-board RAM • OPTI chipset • surface mount design

DX33 / DX2-50 / DX2-66MHz \$299
DX50MHz \$349

*CPU not included



SOUND PRODUCER PRO

The most complete stereo sound system available for your IBM AT or compatiblesupport for four sound standards

- ships with many more audio utilities, such as CD Player, Jukebox, Monologue, Orchid Voice Notes, and more
- includes free stereo speakers and a microphone

\$189
VLB IDE Controller \$79



ORCHID

FAHRENHEIT VA

The scorchingly fast Windows accelerator with voice annotation capabilities

on-board graphics processor • resolutions to 1280 x 1024 • includes Orchid HyperDrive

• includes Orchid Voice Notes and microphone

ISA	Fahrenheit	VA	1MB	\$219
VLB	Fahrenheit	VA	1MB	229
ISA	Fahrenheit	VGA	1MB (No Audio)	169
VLB	Fahrenheit	VGA	1MB (No Audio)	179



**Sales
Hotline**

408-247-4444

Technical Support 408-247-4990 Fax 408-247-4448

Not responsible for typos / Price subject to change w/o notice / Price good thru 3/7/93

VALUES IN TOWN!

An Authorized **CANON** Reseller & Service Center

BJ-200 Laser Quality... **Canon**

At an InkJet Price!

4 out of 5 preferred
the BJ-200 over HP!

- Prints up to 4ppm
- 7 resident fonts
- 100-page sheet feeder
- Hold up to 10 envelopes

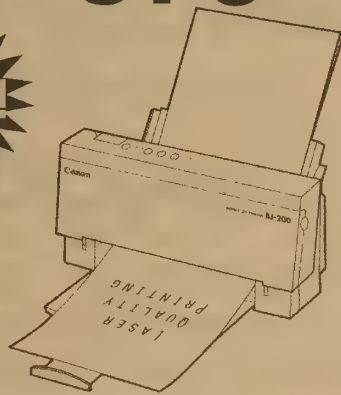
NEW!

BJ-20 is the only
printer you need.

*Quiet Portable Bubble Jet
Personal Printer!*

- Up to 188cps at high speed mode
- Laser-quality performance for printing text & graphics
- 50-page sheet feeder included
- Weights less than 5lbs!

\$379



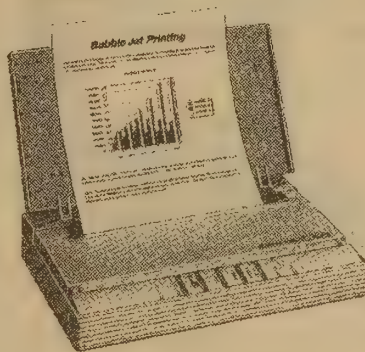
\$389

BJ-5

Portable Bubble Jet

Light Weight & Portable!

Perfect for any notebook or Laptop!



**Identical
to BJ-10ex**

\$199

- Prints up to 83cps
- Text & graphics up to 360dpi
- Uses plain paper & transparencies
- 2-year warranty

BJ-300/330 349/589

BJC-800 Color Bubble Jet 1899

INNOVA 486
Desktop System

Canon

INNOVA 386NX
Notebook

**One-Year
Roadside
Warranty**

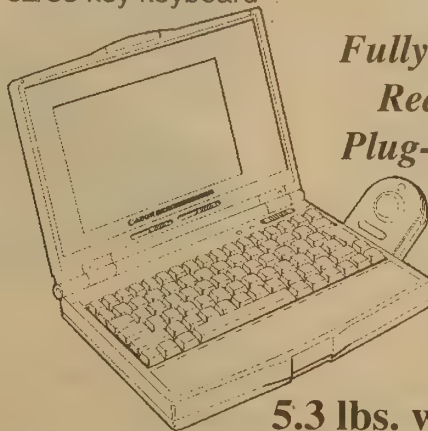


**Fully Loaded
Ready to
Plug-n-Play!**

\$1599

- Intel Upgradable **80486SX/25MHz**
- **4MB RAM** exp. to 34MB on-board
- 3.5" 1.44MB, 5.25" 1.2MB FDD
- **130MB** 16ms hard drive
- Super VGA VRAM Video card
- Canon **Color 14" SVGA .28mm**
- 101 key compact keyboard
- PS/2 type mouse
- Mouse pad
- Factory installed software:
- MS-Dos 5.0
- MS-Windows 3.1
- MS-Works for Windows
- **One-Year Roadside Warranty**

- **AMD 386SXLV/25MHz**
- **4MB RAM** exp. to 8MB on-board
- 3.5" 1.44MB floppy drive
- **60MB** 16ms hard drive
- 10", 64 gray scale backlit VGA
- **Fax Modem** (96/48 send/receive)
- 82/83 key keyboard
- Logitech trackman mouse
- Factory installed software:
- MS-Dos 5.0
- MS-Windows 3.1
- MS-Works for Windows
- Win-Fax
- **One-Year Roadside Warranty**



**Fully Loaded
Ready to
Plug-n-Play!**



\$1699

5.3 lbs. w/battery!

ACCESS
COMPUTER TECHNOLOGIES

STORE HOURS:

MON-FRI 9-8

SAT-SUN 10-5

2225 EL CAMINO REAL SANTA CLARA, CA 95050

MOBILE COMPUTING...

Huge Selection of Notebooks

TOSHIBA

Ready
to
Run!

Satellite T-1800

386SX-20MHz w/2MB & 60MB HDD

AUTO- "shut down", CPU
"sleep" mode, Resume electronic
bookmark & more...

DOS 5.0 Pre-Installed

\$1329



- VGA, parallel, keyboard & PS/2 mouse ports
- 64 shades of gray • Toll-free support • 1-year warranty

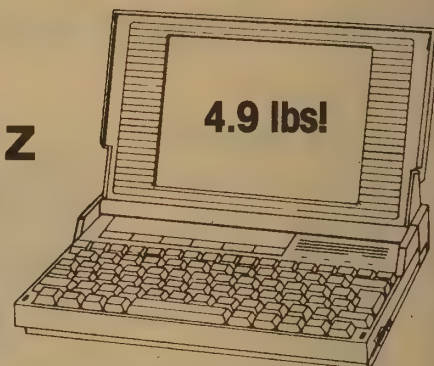
T-1850	386SX-25 2MB /80MB HDD	\$1699
T-1850X	386SX-25 2MB /120MB HDD	1995
T-3300	386SL-25 2MB /80MB HDD	1995
T-1850C	386SX-25 COLOR 2MB /120MB HDD	2599

SHARP

PC-6785

386SL/25MHz
Notebook

\$1599



- 4MB RAM exp. to 8MB
- 32 shade VGA screen
- 4-level power manager
- 80MB HDD
- Built-in trackball
- Includes DOS 5.0
- Built-in "IC" card slot

7700	486SX-25 4MB /124MB HDD	\$2099
7750	486DX-33 4MB /124MB HDD	2499
6891	386SL-25 COLOR 4MB /120MB HDD	2799

altima

- Upgradeable Processor
- Only 5.7 lbs. w/ Battery
- Integrated Built-in Trackball Available
- Internal Modem w/MNP5 & Fax Available

Fast!
486's

The fastest processor in a notebook computer!

486SLC/33MHz
2MB RAM
80MB HDD

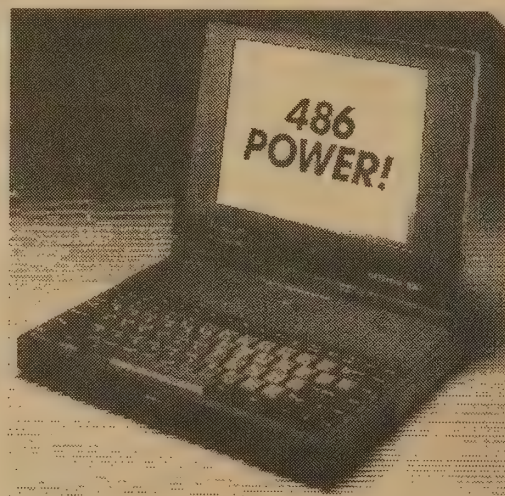
\$1850

#NBA433L

486SLC/33MHz
2MB RAM
120MB HDD

\$2099

#NBA433L2



486SX/25MHz
4MB RAM
120MB HDD

\$2399

#NBA25120

486DX/33MHz
4MB RAM
120MB HDD

\$2799

#NBA433DX

- 8KB Cache • 64 shades of gray

- 84 key standard keyboard • Autoswitching AC 110/220V

Sales
Hotline

408-247-4444

Technical Support **408-247-4990** Fax **408-247-4448**

Not responsible for typos / Price subject to change w/o notice / Price good thru 3/7/93

FOR PEOPLE ON THE GO!

And Notebook Accessories.

TEMPO ^{by} EVEREX

Hurry!
Limited Stock!

NOTEBOOK BLOWOUT!

MODEL	386	RAM	HDD	FAX MODEM	PRICE
LX	SX20	1MB	60MB	NO	\$1099
LX	SX20	3MB	60MB	NO	1199
Carrier	SX20	2MB	40MB	NO	1099
Carrier	SX20	2MB	40MB	YES	1199
Carrier	SX20	4MB	80MB	NO	1399
Carrier	SL25	4MB	80MB	NO	1988

Stop your computer from "Crashing!"

RHINO Notebook/Laptop
Carrying Case

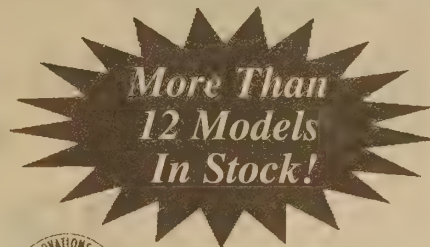


There are cases...
And there are **RHINO** cases!



HARD PROTECTION/SOFT BAG

CELLULAR ARMOR™ A high density thermoplastic with a double-wall honeycomb design which *elastically disperses any shock*. It protects valuable equipment from damage, shooting the shock out and away, and is also a great insulator against heat and cold.



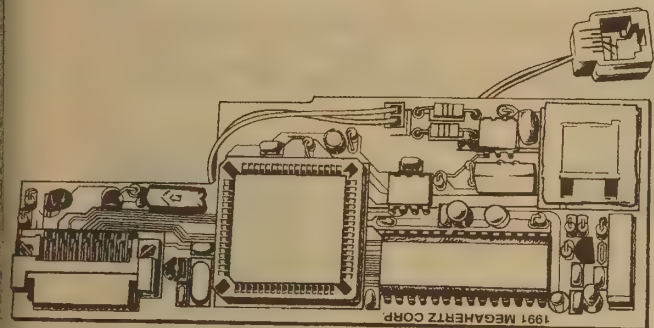
Starting from..... **\$39⁹⁵**

Model AC-21

M42 Megahertz

CORPORATION

The Leader in Notebook Data/Fax Modems

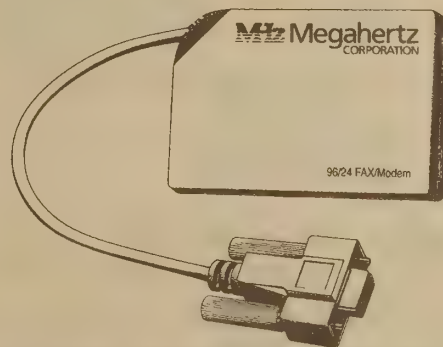


All Megahertz Notebook Data/Fax Modems include:

- MNP-5 & V.42/V.42bis error correction and data compression
- send and receive FAX
- WordPerfect's MTEZ data/fax communications software for DOS and Eclipse fax software for Windows
- Toll-free technical support
- 5-year warranty

DATA & FAX SPEEDS:

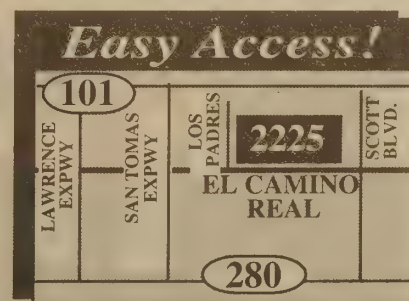
	Internal		External
	TOSHIBA	COMPAQ	POCKET DESIGN
14,400bps data/14,400bps FAX	\$529	\$499	\$389
9600bps data/9600bps FAX	\$499	\$479	\$329
2400bps data/9600bps FAX	\$219	\$229	\$199



ACCESS

COMPUTER TECHNOLOGIES

2225 EL CAMINO REAL SANTA CLARA, CA 95050



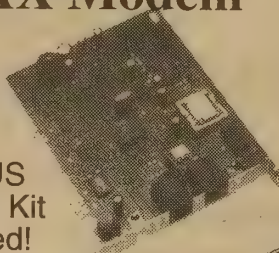
ALWAYS A HUGE SELECTION OF

Sales & Service Open 7 Days a Week

9600bps Internal FAX Modem

- Enhanced AT command set
- CCITT V.54-Local digital & analog, remote digital loopback
- Auto speed & communication adaption
- Call progress monitoring
- Supports COM 1-COM 4
- Quick Link II Fax software
- 3-year warranty

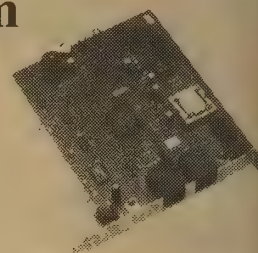
BONUS
Prodigy Kit
included!



9600send/48receive class I 69.00
9600send/96receive class II 89.95

2400bps Internal Modem

- Enhanced AT command set
- CCITT V.54-Local digital & analog, remote digital loopback
- Auto speed & communication adaption
- Call progress monitoring
- Full & half duplex/2 wire dialup
- Supports COM 1-COM 4
- 3-year warranty

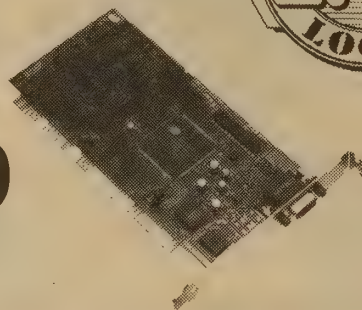


Modem w/ Quick Link II 44.95
Modem w/ Prodigy Kit 49.95

16-BIT VCOLOR SVGA

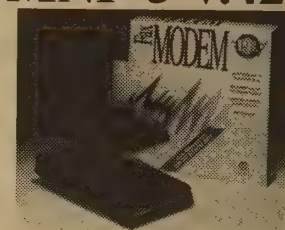
\$129

- 1MB memory
- 16.7 million colors at 640 x 480
- 1280 x 1024 (interlaced)
- 72Hz refresh rate • 3-year warranty



14.4 Fax Modem w/ MNP-5 V.42

- CCITT V.32 (9600bps)
- MNP-5, CCITT V.42bis BTLZ
- CCITT V.54-Local digital & analog, remote digital loopback
- Auto speed & communication adaption
- Call progress monitoring
- 38,400bps maximum data throughput
- Quick Link II software
- 3-year warranty



Internal Modem 239
External Modem 279

Maxtor Hard Drives

*Reliable High-Performance
Magnetic Drives to Meet Your
Most Demanding Jobs!*



120MB
15ms IDE
\$259
340MB
IDE or SCSI
15ms
\$599

213MB
15ms IDE
\$379
535MB
12ms IDE
\$899

119MB
19ms IDE
\$259
200MB
12ms IDE
\$379

170MB
15ms IDE
\$299
543MB
12ms IDE
\$899

**Sales
Hotline**

408-247-4444

Technical Support 408-247-4990

Fax 408-247-4448

Not responsible for typos / Price subject to change w/o notice / Price good thru 3/7/93

MONITORS & GRAPHIC CARDS

Name Brands...At Low Low Prices!

SOCOS

High Quality
without the High Price!

CM-1402

Multi-scanning
Super VGA Monitor



- 1024x768 max. resolution
Maximum resolution at interlaced mode
- Super Fine CRT
0.28mm dot pitch & non-glare CRT for greater clarity
- Tilt-swivel base...
For comfortable viewing position!
- Unlimited colors...
For photographic images!
- Auto Synchronizing
Auto scanning of all horizontal & vertical frequencies

\$299

SONY®

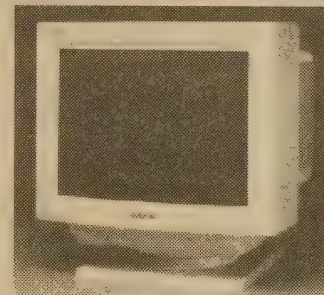
14" CDP-1430

SVGA Monitor



The CDP-1430 features: enhanced image quality, high resolution, high refresh rate, digital microprocessor control via push buttons and overscanning for edge-to-edge screen images.

- Up to 1024x768, Non-Interlaced
- .25mm dot pitch
- 72Hz fresh rate
- Multiscan, trinitron tube
- Meets Swedish Standards for VLF/ELF Magnetic Emissions



IBM & MAC
compatible!

1320 14" 640 .25mm \$339
1604S 17" Non-Interlaced .999
1936 20" .30mm 2288

\$629

NANAO F550i

17" SVGA Monitor

\$1150



IBM & Mac
Compatible

- Up to 1280x1024, .28 mm dot pitch
- Flat Screen
- Analog RGB input
- Low Radiation

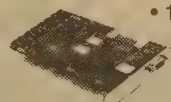
9080i 16" SVGA \$995



STEALTH 24-BIT

Windows Accelerator Card

- 1280 x 1024, 16 colors non-interlaced
- Displays 16 million colors in windows
- 1MB RAM



\$219

Stealth 24 VLB version \$249



GRAPHICS ULTRA +

Mach 32 Accelerator Series

\$299



- 1024 x 768 in 65,000 colors
- 1MB RAM, supports 2MB
- Accelerates Windows, OS/2, Unix & CAD

Ultra Plus 2MB \$359
Ultra Pro EISA 2MB 629



VGA CARD
800x600 256K

\$25

ViewSonic™ 7

17" SVGA Monitor

\$1050



Rated #1
by InfoWorld!

- Up to 1280x1024, .28 mm dot pitch
- 30-64 kHz scan frequency
- Auto 110/220V
- Analog RGB input

Viewsonic 1 \$239
Viewsonic 6E 369

ACCESS

COMPUTER TECHNOLOGIES

2225 EL CAMINO REAL SANTA CLARA, CA 95050

STORE HOURS:

MON-FRI 9-8

SAT-SUN 10-5

The Intelligent Choice...

Serving the Community Since 1987.

Robotics
The Intelligent Choice in Data Communications



The Easy-To-Use Modem
for People Who Think Like The Pros.

The 14,400bps Series Available with Fax

- Asynchronous, full-duplexing communications from 14,400 to 300bps
- CCITT V.32 bis at 14,400/12,000bps
- Additional CCITT and Bell compatibility with 2400/1200/300 dial-up modems
- CCITT V.25 for calls originating outside the U.S. and Canada

- Error control (both CCITT V.42 & MNP 2-4)
- Data compression (both CCITT V.42 bis & MNP 5) for throughput up to 57,600bps!
- Auto-Answer/Auto-Dial
- Nine LED status lights

**Sportster 14,400
High Speed Data**

CCITT V.32 bis with V.42 bis

Internal \$299
ADU144I

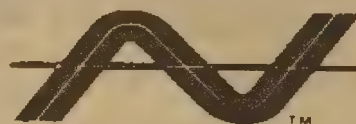
External 319
ADU144E

**Sportster 14,400
Fax Modem**

CCITT V.32 bis with V.42 bis

Internal \$319
ADU1496I

External 339
ADU1496E



**NORTHGATE
COMPUTER
SYSTEMS, INC.**

Authorized Dealer



PS/2,
AT&T,
Tandy
Available

OmniKey™ Keyboards

101NI \$79

102 79

UltraT / UltraF 99

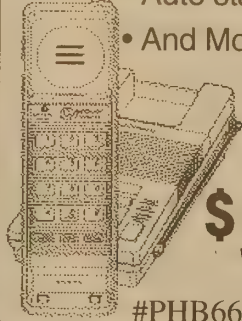
Skin Protectors 19⁹⁵ each



BellSouth Products™

CORDLESS PHONE

- 10-number memory
- Handset/base paging
- Last number redial
- Auto standby
- And More...

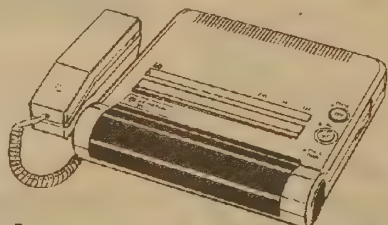


#PHB665

\$39⁹⁹

FAX MACHINE

- Auto fax/phone switch
- 16-level gray scale
- Remote control reception
- And More...

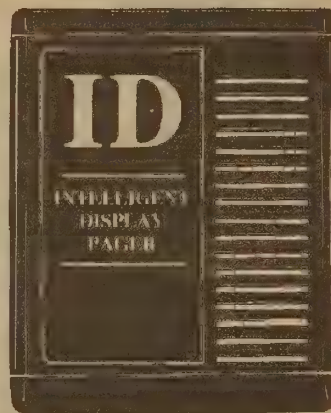


Model 2501P

\$299

**Now! You're always in touch!
Brand New!**

- 18 Message Memory
- Vibrate-Silent Alert
- Memory Saver
- Low Battery Indicator
- And More...



**NEW MOTOROLA
Pagers Starting at \$79**

- INSTANT ACTIVATION 7 DAYS A WEEK!
- LARGE SERVICE COVERAGE AREA!

**Name Brand Pagers
at your ACCESS Now!**

**POSITIVE
COMMUNICATIONS, INC.**

**Sales
Hotline**

408-247-4444

Technical Support 408-247-4990

Fax 408-247-4448

Not responsible for typos / Price subject to change w/o notice / Price good thru 3/7/93

ACCESS COMPUTER

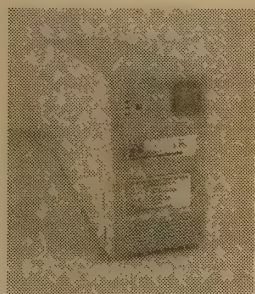
...Personal Service, Value & Pricing!

PREVENT BLACKOUT!

- Maintenance free design • LED display
- Protection against line spikes, surges, over and under voltage, and blackouts
- Phase lock loop design and continuously output overload & short circuit protection
- Built-in self test function
- Built-in intelligent computer interface for use w/ Novell, Unix, Xenix, and others
- PWM regulated output • High efficiency
- Quiet operation, less than 60Db

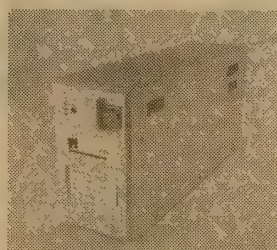
Uninterrupted Power Systems

1250 VA



LU-1250 \$519

550 VA



LU-550 \$239

Leedman
Electronics Inc. USA

SHARP®

JX-9500H

9 pages per minute!

- 300dpi resolution
- 512K exp. to 4.5MB
- 6 resident fonts
- HP II, Epson, IBM & Diablo emulation

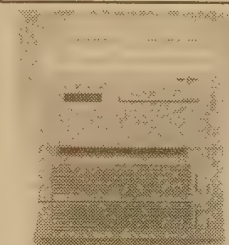


\$649

JX-9600

600 dpi resolution!

- Fast 8ppm, RISC processing
- PCL-5
- 1MB exp. to 9MB
- 27 resident fonts
- Two 250 sheet paper trays



\$1299

JX-9600PS PostScript version \$1599

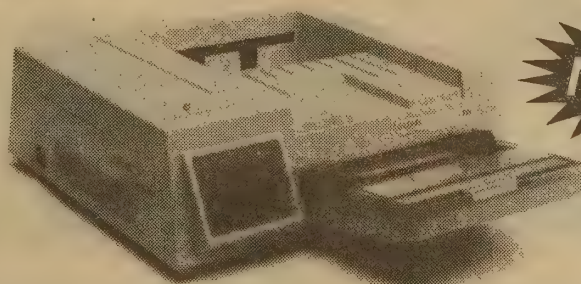
OKIDATA®

LED Page Printers



OL400.

PC Magazine®
Editors' Choice.



NEW!

OL810.

With OKI

Smoothing Technology™
PCL-5 Scalable Fonts

\$599

CALL

- Industry's best warranty: 5 years on printhead, 1 year parts/labor on printer
- PC Magazine Editors' Choice- June 12, 1990
- 4ppm, 300dpi: crisp blacks, publication quality output
- More standard typefaces/fonts than LaserJet™ IIP
- High-capacity 200-sheet paper tray included
- HP® Series II compatible
- Design fits any desktop

- Industry's best warranty: 5 years on printhead, 1 year parts/labor on printer
- OKI Smoothing Technology™ for 1200dpi appearance
- 8ppm, 300dpi: crisp blacks, publication quality output
- 1 MB RAM exp. to 5MB, 13 HP III scalable fonts
- High-capacity 200-sheet paper tray included
- HP® Series III compatible
- Optional RS-232 Serial interface

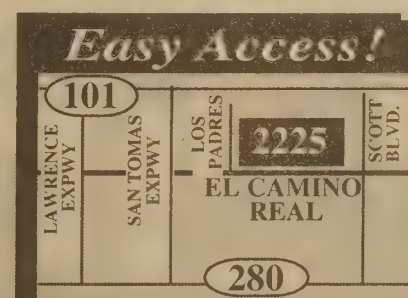
9-PIN

- **ML-320** 300cps\$319
- **ML-321** Wide Carriage 459
- **ML-3410** Fast 550cps! 8-part forms . 1299

24-PIN

- **ML-380** 192cps, 63cps 229
- **ML-590/591** NEW Auto Form Sensing 469/599
- **ML-393+** Fast 520cps Wide Carriage 949

ACCESS
COMPUTER TECHNOLOGIES



2225 EL CAMINO REAL SANTA CLARA, CA 95050

A HUGE SELECTION

Thousands of Printers in Stock!

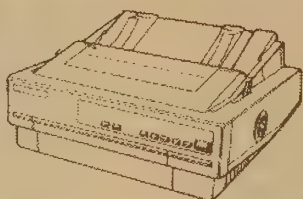
EPSON®

WHEN YOU'VE GOT AN EPSON,
YOU'VE GOT A LOT OF COMPANY™

**Lowest
Price
Guaranteed!**

LQ-570  LQ-1070

\$239



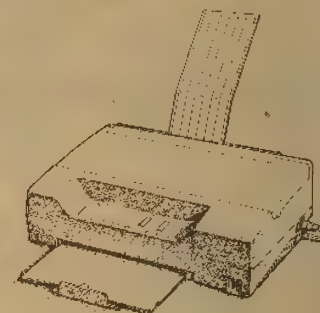
- 24-pin, 315cps
- 12 built-in fonts
- 2 year warranty

\$359

- 24-pin, 315cps
- **WIDE Carriage**
- 2 year warranty

Action Printer
AP-3250 24-Pin

\$179



- Innovative, space-saving case design
- Operates flat or upright
- 50-sheet 8 1/2" x 11" paper tray
- scalable fonts
- Simple two-button control panel
- Quiet operation
- 2-year limited warranty

**Ideal for home use!
Easy Operation**

MATRIX
LQ-510 FREE Multi-font Module **\$219**
LQ-870 **469**
LQ-1170 **599**

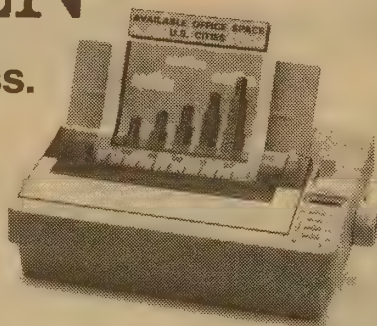
LX-810 9-pin 80 column **169**
LQ-2550 24-pin 400cps **899**
FX-870/1170 **NEW 269/359**
DFX-5000 9-pin 530cps **1299**

CITIZEN™

The Best in the Business.

Featuring
Color On Command™

\$199



GSX-130

- 24-pin printer • 180cps, 60cps LQ
- 5 Built-in fonts • Fontlocking feature
- Paper parking • Features Command-Vue II™ control panel
- Optional Color On Command™ • 2 Year limited warranty

Color On Command Option: \$49

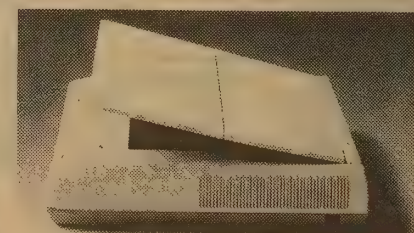
GSX-140 plus 24-pin 220cps, 6 fonts **\$269**
GSX-230 24-pin 270cps, 8 fonts **259**
GSX-240 24-pin 300cps, 13 fonts **309**

UMAX®

The Image Expert.

Rated #1 by

- PC-Computing-June 1992
- PC-Source-April 1992



UC630

True 600dpi 24-Bit Flatbed Color Scanner

Great for all your desktop publishing needs!

- 16.8 million colors, 24-bit design
- Scaling to 100% in 1% increments
- 600 x 600 dpi resolution
- Built-in SCSI interface
- Includes Imagein Color®
- MAC version available

\$1199

**Sales
Hotline**

408-247-4444

Technical Support 408-247-4990 Fax 408-247-4448

Not responsible for typos / Price subject to change w/o notice / Price good thru 3/7/93

OF PRINTERS!!!

An Authorized PANASONIC Reseller & Service Center

PRINTER RIBBON
by PANASONIC

\$5.99

For: KX-P1180/
1191/1695/2150

Panasonic
Office Automation

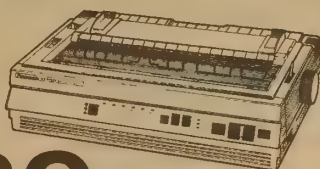
SAVE up to **\$150**

2-YEAR WARRANTY

KX-P1123

- 24-pin
- 240cps, 63cps LQ
- 7 built-in fonts
- 2 year warranty

\$169



KX-P1124i	24-pin, 300cps, 8 built-in fonts	\$219
KX-P1624	24-pin, 192cps, wide carriage	279
KX-P1695	9-pin, 330cps, wide carriage	199
KX-P2123	24-pin, 240cps, color capable	199
KX-P2180	9-pin, 240cps, quiet series	139
KX-P2624	24-pin, 300cps, quiet series	299

*THESE ARE FACTORY REMANUFACTURED & FULLY GUARANTEED



**HEWLETT
PACKARD**

DeskJet 500		\$399
DeskJet 500 Color		529
DeskJet 550C		719
IIP Plus	4ppm, PCL-4	799
IIIP	4ppm, PCL-5	999
IV	8ppm, 600dpi, PCL-5	1399
IIID	8ppm, dual tray, PCL-5	2295
IIISi	17ppm, auto interface switch	3399

Toner Cartridges

III II/IIIP

\$75 \$59

PTC100 PTC150
manufactured by CANON

COLOR PRINTERS

PaintJet	699
PaintJet XL300	2299

SCANNERS

ScanJet IIP with interface	799
ScanJet Color with Interface	1450

It doesn't Scream, ...
it whispers.

The QUIET Series Printers

Come Hear the Difference! **43.5 dBA!**

Panasonic
Office Automation

KX-P2123

- 24-pin letter quality
- 240cps, 64cps LQ
- 6 fonts, paper parking
- 2 year warranty

\$238

**2100 Series
Color Option
Available
\$49.95**

KX-P2124

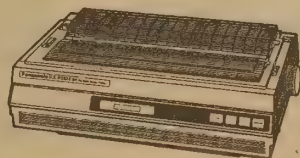
- 24-pin letter quality
- 320cps, 85cps LQ
- 8 fonts, 360x360
- 2 year warranty

\$319

KX-P2180

- 9-pin matrix
- 192cps, 38cps NLQ
- 6NLQ fonts, (45 dBA)
- 2 year warranty

\$159



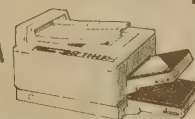
FREE
Adobe Type Manager!
W/ Purchase of
2624, 2124, 2123

KX-P2624

- 24-pin letter quality
- 300cps, 100cps LQ
- 11 fonts, 26K buffer
- 2 year warranty

\$378

**KX-P4455
PostScript Laser**

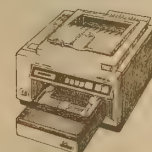


\$1698

- 2MB RAM exp to 4MB
- Two 250 sheet paper trays
- 39 PostScript fonts • 11PPM



**KX-P4430
Laser Printer**



NEW!

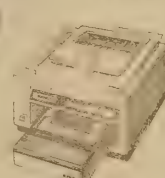
\$888

**Scalable
Fonts!**

- 1MB RAM exp to 5MB
- PCL-5 Scalable
- 300 dpi resolution • 5 PPM
- 200 sheet paper capacity

KX-P4450i \$1098

**KX-P4410
Laser Printer**



**FREE Adobe
Type Manager!**

\$599⁹⁹

5ppm!

- 512K RAM exp to 4.5MB
- 200 sheet paper capacity
- 300 dpi resolution • 5 PPM

MATRIX

KX-P1180i	\$149	KX-P1695	\$348
KX-P1124i	289	KX-P1624	348

ACCESS
COMPUTER TECHNOLOGIES

STORE HOURS:

MON-FRI 9-8

SAT-SUN 10-5

2225 EL CAMINO REAL SANTA CLARA, CA 95050

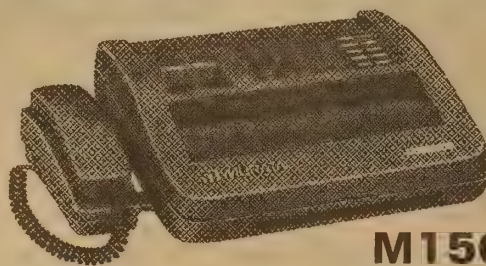
ACCESS IS NOW YOUR

Sales & Service Is



As your communications needs grow, you can rely on Murata. Backed by toll-free telephone support, sales and service networks nationwide, and our Full Circle Service™ program (which even includes house calls if necessary), featuring 90-day parts/labor on-site warranty. Murata fax machines are built for the most important business in the world. Yours.

Quality Faxes, At Affordable Prices!



M1500

\$399

The Desktop Business Fax... With Automatic Paper Cutter

- Auto paper cutter
- 10-page auto doc feeder
- 16-level grayscale
- Stores up to 20 numbers -10 one-touch, 10 speed-dial
- Prints conformation reports
- And much more...

Quality **IMAGE-MATE**

Fax Paper by Murata

Hurry! Limited Quantity!

2 ROLL 49' PK \$3⁹⁹
#FAP482

4 ROLL 98' PK \$9⁹⁹
#FAP984

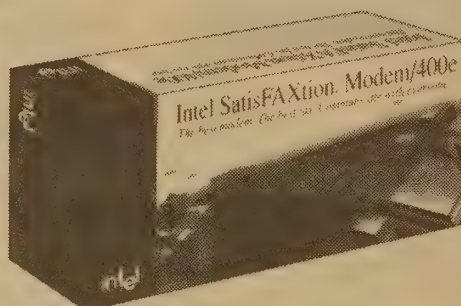
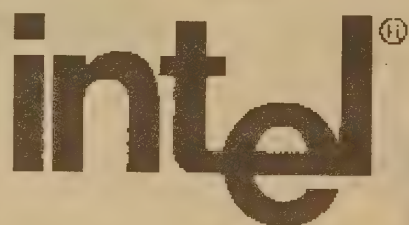
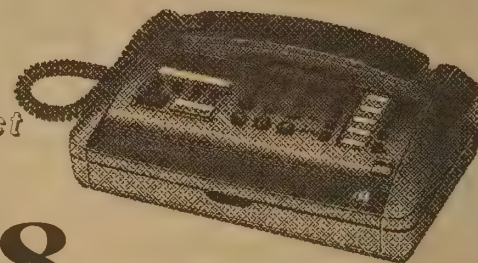
Fax, Phone & Copier For the Home

- 20-number autodialer
- Weights 5 1/2 lbs.
- Fine resolution mode
- Built-in, pre-recorded "voice-on-chip" prompt

UltraCompact
Design!

\$338

M750



SatisFAXtion® Modems

The best modem. The best fax.
Communicate with everyone.

100	Internal 2400bps modem, group 3 fax	\$99
200	Internal 2400bps/V.42bis • Up to 9600bps	299
400	Internal V.32bis/V.42bis • Up to 57,600bps	399
400e	External V.32bis/V.42bis • Up to 57,600bps	469

OverDrive™ Processors

The powerful performance booster

Improves overall system
performance by up to 70%

486SX 16/20	\$499
425DX	499
425SX	499
486DX 33	669



Math CoProcessors

Instant acceleration for your
power applications.

80387SX	\$88
80387DX	88
80387SL	88
80487SX	499

Sales
Hotline

408-247-4444

Technical Support **408-247-4990**

Fax **408-247-4448**

Not responsible for typos / Price subject to change w/o notice / Price good thru 3/7/93

HOME OFFICE CENTER

Open 7 Days A Week.

MEDIA  VISION

FUSION CD 16

SUPER BUNDLE!

Internal CD-ROM System
Including:

- SONY internal CD-ROM Drive
- 4 Top CD Library Titles
- Pro Audio Spectrum 16 Sound Card
- Two Labtec Stereo Speakers
- And More...

\$499

Fusion CD \$399
Pro Audio Spectrum 16 \$189

NEW!

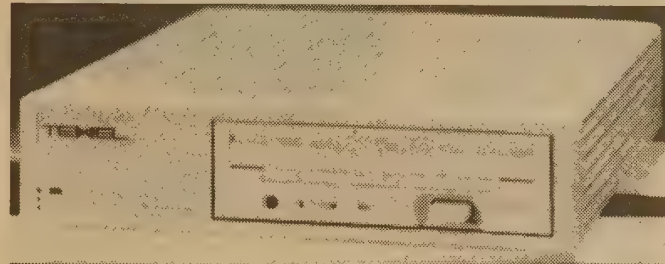
FREE CD Storage Holder!
*With the Purchase of any CD-ROM System
#CDD1161
Only at ACCESS!


Multimedia PC.



TEXEL

High-Performance Double-Speed CD-ROM Drives

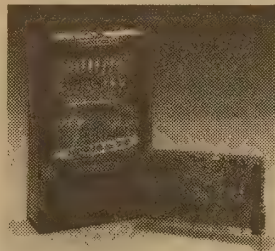
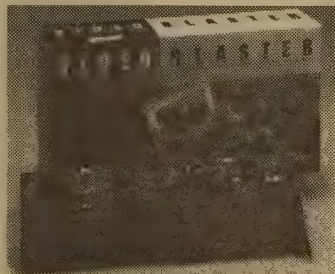


- Fast 265ms average access time
- 300 KB/sec data transfer • SCSI-2 compatible

External Drive Only \$549
External Bundle 829

CREATIVE

CREATIVE LABS, INC.



FREE CD Storage Holder!
*With the Purchase of any CD-ROM System
#CDD1161
Only at ACCESS!



The All-in-One Multimedia Solution for the PC!

SOUND BLASTER.

MULTIMEDIA \$509
UPGRADE KIT

Reseller News
Editors' Choice

- Sound Blaster Pro Sound Card
- High performance CD-ROM drive
- Huge bundle of software & CD-ROM titles
- MPC compatible • And much more...

VIDEO BLASTER

- Display full-motion video in a Window, overlay computer text & graphics on video
- Freeze, store, manipulate & export images from VCR's video discs, video cameras
- Digital-analog sound mixer & programmable volume controls
- And much more...

\$349

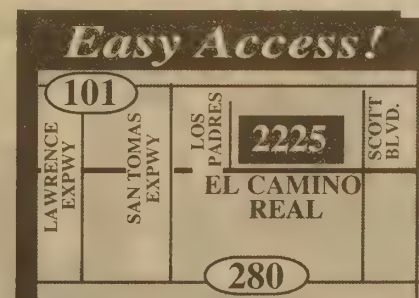
SOUND BLASTER PRO BASIC

- Top-quality sampling w/ 8-bit stereo digitized voice channel-4-44.1KHz sampling rate
- 4-operator, 20-voice stereo FM music synthesizer
- CD-ROM interface for Creative Labs or Panasonic CD-ROM drives
- Windows 3.1 and Sound Blaster compatible

\$159

ACCESS
COMPUTER TECHNOLOGIES

2225 EL CAMINO REAL SANTA CLARA, CA 95050

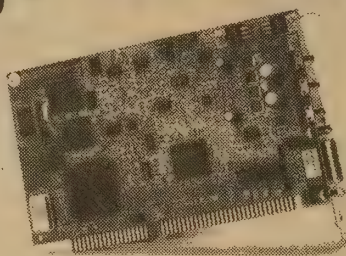


SHOP ACCESS FOR

From PCs...To Faxes...To Phones...



SOUNDMAN 16



Highest Fidelity Sound Available:

- 16-bit stereo playback & recording
- Sampling/playback rate 2KHz-44KHz
- Yamaha OPL-3 stereo synthesis chip w/ 4 operators generating 20 voices
- Dynamic filtering from 4Hz-20KHz
- frequency response: 30Hz-20KHz

Input / Output:

- Stereo amplifier output at 4 watts channel
- Drives 4 or 8 ohm speakers
- Microphone & line-in inputs
- IBM-standard joystick port
- Accepts CD-Audio input from CD-ROM drives (optional)
- MIDI port (optional)

16-BIT CD-QUALITY SOUND CARD



CALL



SERIES 3

Unquestionably, The Most Powerful Pocket-Sized Computer In The World!

*More than just a computer, it comes with
a complete range of built-in software...*

- Word Processor & Outliner
- Time & Personal Management
- Computer Calculator
- Powerful Graphics Programming Language
- Database
- Automatic DTMF Dialing
- Communications facilities
- World Information

Psion Series 3

*puts the concentrated power
of a desk top computer
and its software...
into your pocket.*



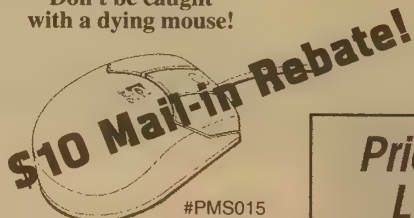
\$399



MouseMan™ High Resolution Serial PS/2 Mouse

Don't be caught
with a dying mouse!

- 400dpi resolution
- Three programmable button flexibility
- New ergonomic design
- Enhanced MouseWare™ Utilities
- Windows™ 3.1 compatible
- IBM PC, XT, AT, PS/1, PS/2 compatible

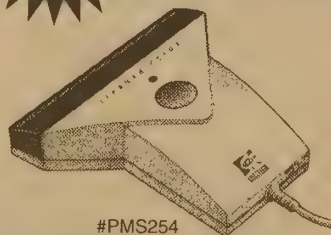


#PMS015

ScanMan™

Hand-Held Color Scanner Add the Impact of Color!

- 24-bit hardware, captures 16.8 million colors
- Virtual page scanning-auto stitch, multiple scans together
- Total system calibration-color matching
- Saves images in TIFF, BMP, PCX, JPEG & EPS formats
- Supports Windows™ (OLE) & TWAIN protocols



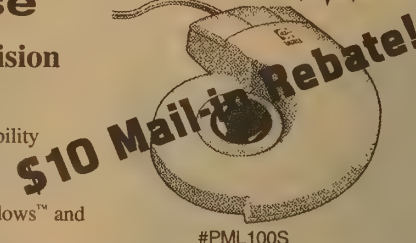
#PMS254

**Prices too
Low to
Advertise!
Call Us!**

TrackMan™ High Precision Stationary Mouse

Designed for Comfort and Precision

- Three programmable button flexibility
- New ergonomic design
- Enhanced MouseWare™ Utilities
- Guaranteed to work with all Windows™ and DOS applications



#PML100S

TrackMan™ Portable Mouse

See and feel the difference

- Small, lightweight and portable, three-button support
- Made to travel, includes sturdy casing & padded case
- Right or left hand w/ re-routable cable
- One piece simple spring clamp installation
- LogiPanel programming buttons in Windows
- Limited lifetime warranty



#PML100P

**Sales
Hotline**

408-247-4444

Technical Support 408-247-4990

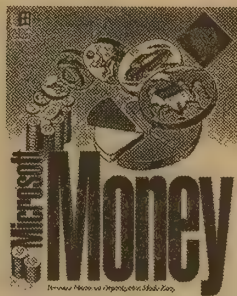
Fax 408-247-4448

Not responsible for typos / Price subject to change w/o notice / Price good thru 3/7/93

HUGE SAVINGS!

Super Software Sale!

Microsoft Money for Windows Version 2.0

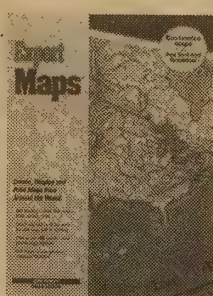


\$14⁶⁹

SSM031

Expert Maps

Create, Display &
Print Maps from
Around the World!

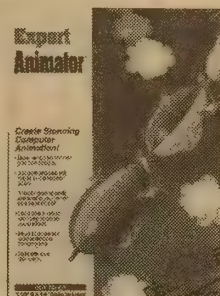


\$14⁹⁹

SSY2820

Expert Animation

Create Stunning
Computer
Animation!

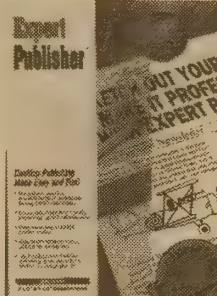


\$14⁹⁹

SSD02840

Expert Publisher

Desktop
Publishing
Made Easy
& Fun!



\$14⁹⁹

SSD2832

Face Lift for Windows Version 2.0

The Fast, Easy
Way to Scale,
Manage &
Enhance Fonts
Under Windows!



\$14⁹⁹

SSW861

Expert Publishers 10 Best

Create Greeting
Cards, Newsletters,
Banners, Forms,
Brochures & Much
More...

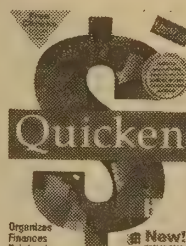


\$19

SSD9520

Quicken for Windows Version 2.0

VOTED BEST OF '92
PC Magazine

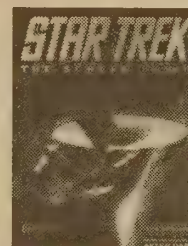


\$29

SSM022

Star Trek for Windows Version 1.0

The Screen
Saver!
From the
Makers of
AFTER
DARK.



\$39

SST1701

Dashboard for Windows

The Convenient
Push-Button
Utility Panel For
Windows



HEWLETT
PACKARD

\$49

SST571

XTree for Windows

VOTED BEST OF '92
PC Magazine

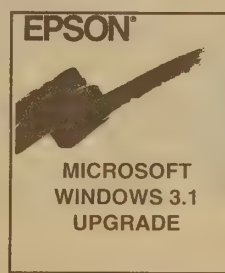


\$49

SST246W

MS-Windows 3.1 by EPSON

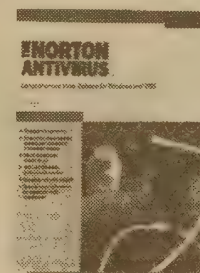
3.5" and 5.25"
versions
available!



\$59

SSW031T3

Norton AntiVirus Version 2.1



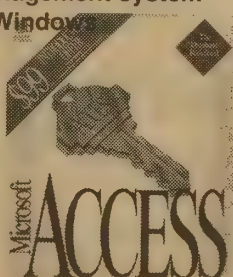
SYMANTEC

\$59

SST213T

MS-Access Database Management system for Windows

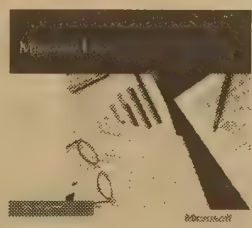
Limited
To Stock
On Hand!



\$89

SSH023

MS-Excel for Windows Version 4.0

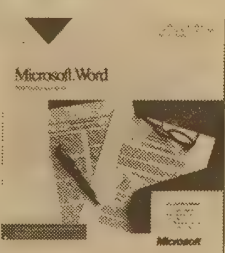


\$299

SSG074

MS-Word for Windows

VOTED BEST OF '92
PC Magazine

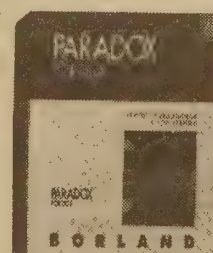


\$319

SSE039

Paradox for DOS Version 4.0

VOTED BEST OF '92
PC Magazine



\$499

SSH251

ACCESS

COMPUTER TECHNOLOGIES

STORE HOURS:

MON-FRI 9-8

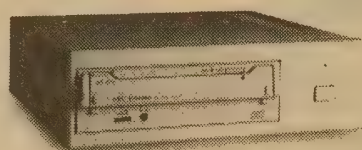
SAT-SUN 10-5

2225 EL CAMINO REAL SANTA CLARA, CA 95050

COMPLETE LINE OF NEC PRODUCTS

An Authorized NEC Reseller

Fastest Readers Available!



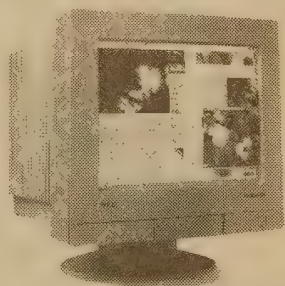
InterSect™ CDR-74
External CD-ROM

\$669

- 280 millisecond access time
- 300KB data transfer w/64K cache memory
- MultiSpin™: for 300KB/sec transfer rate
- MPC Compliant for multimedia applications
- Play Audio CDs w/software & I/F Kits
- Two-year Limited Warranty

Internal \$569

MultiSync® 4FG
Color Monitor



- 15" flat square high contrast CRT
- .28mm trio dot pitch
- 1024x768 resolution non-interlaced
- 75MHz maximum video bandwidth

3FGx	15". .28mm, 1024x768, N/I	\$649
5FG	17". .28mm, 1280x1024, N/I	1299
6FG	21". .28mm, 1280x1024, N/I	2399

NEC
NEC Technologies, Inc



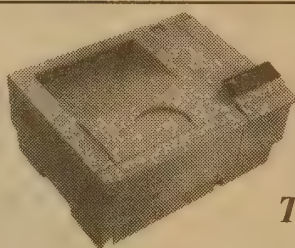
486DX
33MHz
\$1999

READY 486
Computers



- i486SX-25MHz w/4MB RAM exp to 64MB
- Large capacity 170MB hard drive
- NEC 14" SVGA .28mm monitor
- 96S/48R fax, 24SR modem w/Prodigy Kit
- DOS, Win, Desktop, WindowWorks & Quicken
- 5.25" & 3.5" floppy & NEC mouse included

486sx25 \$1699



*Get The Perfect
Warranty On
The Laser Printer
That's A "Perfect 10"*

Buy a Silentwriter® 95

by March 31, 1993, and receive... absolutely FREE.*

**NEC ON-SITE
3 YEAR
WARRANTY**

- 6 PPM, 2MB RAM exp. to 5MB
- 35 scalable Adobe fonts
- 14 bitmat & 8 scalable HP fonts
- HP LaserJet III w/PCL-5 emulation
- Auto Interface Monitoring for easy sharing

\$1399

* Some restrictions apply. Silentwriter is a registered trademark of NEC Technologies, Inc.

\$749

The UltraLite® SL/25C

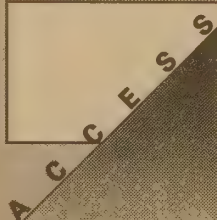
has the #1 essential for a great color notebook.



- i386SL processor w/25MHz
- 2MB RAM exp to 10MB
- Large capacity 80MB hard drive
- Brilliant 9.5" color VGA display
- 64KB cache for enhanced performance
- High-speed Enhanced Parallel Port (EPP)
- Small 9"x11.5" footprint weighing 7.5lbs.

\$2499

Great Colors!



ACCESS

COMPUTER TECHNOLOGIES

2225 EL CAMINO REAL SANTA CLARA, CA 95050

Not responsible for typos / Price subject to change w/o notice / Price good thru 3/7/93

**Sales
Hotline**

408-247-4444

Technical Support 408-247-4990

Fax 408-247-4448

Toward The Virtual Factory

VR Meets Manufacturing With AutoMod

BY ERNEST
R. TELLO

The intense global interest in virtual reality, despite the virtual absence of affordable products for desktop users, is a prime indication that 3-D animated simulation may be coming into its own. In the manufacturing arena, a program called AutoMod may well be the first tool equal to the task of making the virtual factory a useful tool for manufacturers.

AutoMod is undeniably one of the real pace-setting professional applications for today's

AutoMod may well be the first tool equal to the task of making the virtual factory a useful tool for manufacturers. Although it's intended for use by fairly technical hardware manufacturing people, what it does is potentially so spectacular that just about anybody seriously involved in computing will want to know about it.

desktop machines. Although this program is intended for use by fairly technical hardware manufacturing people, what it does is potentially so spectacular that just about anybody seriously involved in computing will probably want to know about it.

AutoMod is actually a hybrid of two differ-

ent types of software, 3-D animation and discrete event simulation. It is aimed specifically at manufacturers who want to produce 3-D animated simulations of their production setups. When equipped with its extensions, you can not only do discrete event simulation with 3-D animations of a manufacturing setup, but also do What If analyses of possible setups by collecting statistics on various alternate configurations of layouts, labor, equipment, etc. To the limited extent these capabilities have existed previously, they've been well beyond the reach of the desktop user.

The amount of computer skill needed to use a program like AutoMod is of about the same order as that for using a sophisticated CAD program like AutoCAD, but its functionality goes beyond design creation. AutoMod is made up of two main software environments, the model development environment and the simulation, or model execution, environment. It runs on most of the main desktop and workstation platforms, including 386 and 486 machines, Sun SPARCstation, Silicon Graphics Indigo, and Macintosh II. The 386 and 486 versions require the Silicon Graphics IrisVision board set. On the DOS platform AutoMod is also shipped with the PharLap DOS extender with SDK, and the Metaware HiC compiler v1.73. The Silicon Graphics 4D and Power Series workstations run a version of the program called AutoMod II. But models from AutoMod running on other platforms can be transported to AutoMod II, and vice versa to some extent.

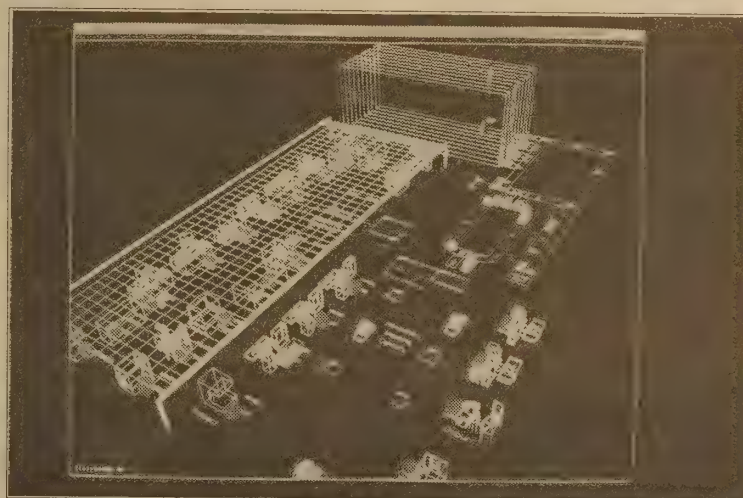
REAL WORLD SIMULATION

Time is a crucial factor for simulation. If it takes too long to develop a simulation, its value can be severely diminished.

Actual simulations can vary considerably both in the amount of detail and in the modeling approach used. Fully detailed simula-

tions are actually extremely rare because of the tremendous time and cost usually involved in their construction. The tradeoffs revolve around a familiar operating strategy of getting as much relevant detail in the least amount of development time.

A tool like AutoMod introduces some new factors into the equation because of its 3-D visual simulation capabilities. Naturally, it takes more work, but you can use custom 3-D graphics to make a working animation showing as much detail of your planned produc-



This model shows many of AutoMod's capabilities including robots, men, conveyor AGVS, AS/RS, processing, etc.

tion setup as you want or need. Clearly, tool design is a key factor in getting the most for the least in all this, and AutoMod offers some important advantages, especially with its menu-driven interface.

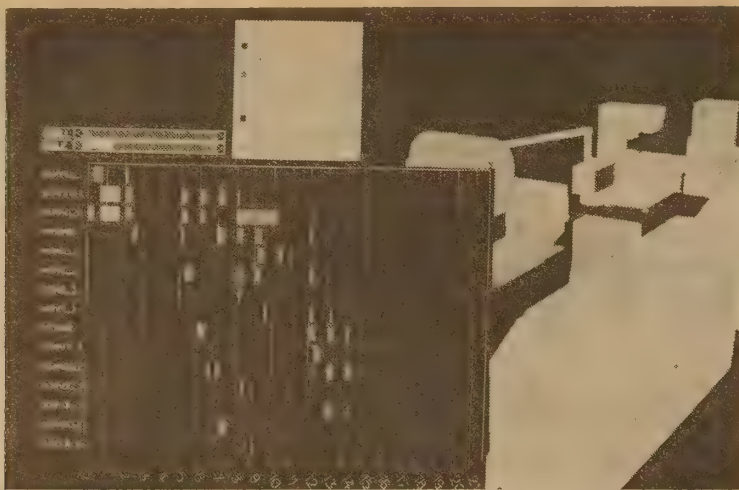
OVERVIEW

When computers were first developed, one of their main attractions and uses was the ability to simulate things that otherwise could not be observed easily. Typically this involved important events that might happen in the future. Simulation has not yet become one of the paradigm mainstream applications for desktop machines—hence many readers may not be familiar with the workings of simulation software, so we'll start with a brief introduction to some basic concepts.

First of all, AutoMod simulations are load driven. This means that loads are the prime movers in such simulations. Loads represent the parts or products that move through a simulated production process. They try to do as much as the system allows them to on each

RESOURCES:

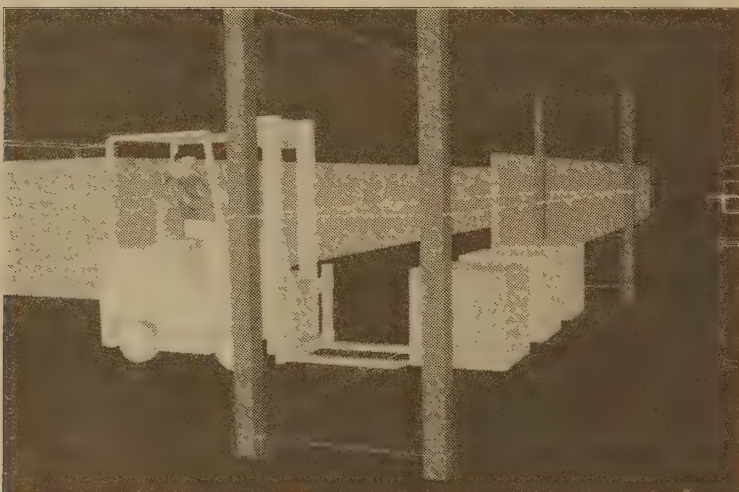
AutoMod
Autosimulations
655 Medical Dr.
Bountiful, Utah 84010
(801)298-1398



Scheduling a machine center (background) generates a GANTT chart (foreground)

tick of the simulation clock. They continue to travel through a process, and even continue on to the next process or sequence of processes, as long as no delay is encountered.

By adding hand-coded vehicle procedures, simulation models can be built where vehicles, as well as loads, have a certain amount of self-determination. Each individual manufacturing part in a simulation has to be modeled by a separate load. If a pallet of parts is being carried by a vehicle, that is one load. But if the pallet is unloaded, and the parts are



Transmission line with robots

to be processed in some way, then each part has to be represented by a load. One of AutoMod's strengths is its ability to provide detailed simulation of most types of transport systems used today in manufacturing.

To really see how simulations work, it's necessary to understand the relationship between processes, loads, and resources. In AutoMod, resources and movement systems are considered as permanent, while loads are considered temporary. Processes control the relationship between loads, resources, and movement systems. They determine the routes the loads follow, where they are to wait, what resources are to be used, and other aspects of a model. You can have only one process system for each model.

Processes have to be used to produce any result, even to allow loads to enter and leave models. A frequent use of processes is to model the operations and delays involved with particular manufacturing operations. There are two ways that loads can move from process to process: either directly, without involving a change of territory, or through

connections, using a movement system.

AutoMod is open-ended in the sense that you can provide your own user-defined load attributes, as well as custom graphics shapes and custom program functions. The basic AutoMod tool comes with support for six different types of subsystem: the Process system, the Automated Guided Vehicle (AGV) system, Conveyers, Automated Storage and Retrieval System (AS/RS), Power & Free system, and the Vehicle Procedures system. The optional add-on modules like Kinetics, which we'll discuss later on, provide the facilities that are the most powerful and unique, and which many users might consider the main attraction.

MAKING FACTORIES VISIBLE

What's it like to use AutoMod?

When you enter AutoMod, the Work Area window appears. A special window is provided for editing the input and output connections for processes. The interface is designed so that you can either enter or select items in list panels, and then click the mouse on a button to perform an operation you want to perform. In essence, then, you can build models by interactively creating simulation objects, and selecting various options for them from drop-down menus and list boxes.

How exactly does a tool like AutoMod take this data you give it about production processes and make them into visible 3-D animations? Obviously, the first step in making simulated production processes visible is in providing a scheme for various components and events to be displayed spatially on a graphics monitor.

In AutoMod, simulation space is divided up into territories. At any given time, specific loads always have to be in one territory or another. They cannot be in more than one territory at a time. Besides space itself, three other things are modeled as territories: vehicles, conveyors, and queues. Generally speaking, every type of movement system has a territory associated with it. In systems that use vehicles, it's just the vehicle that has a territory. In systems that use conveyors, every one of the conveyor's sections is a territory.

The next obvious thing to making planned factory setups visible is determining what the various production elements in a setup will look like. In AutoMod, you assign the visual appearance to loads by load type, giving each a load type that has the desirable graphics image associated with it. For example, if you use the default, a queue object is represented as a cube whose color is red when the queue is empty, and green when the queue is occupied. In other words, the same simulation

model can be assigned a number of different graphic shapes and have entirely different visual characteristics. This kind of modularity is important because it lets you start out with the simple geometric defaults when setting up the basic aspects of a process, then add more realistic custom graphics later. It also means that some of the things that remain constant in a set of alternate production layouts can be reused, while other elements may be added as needed.

SOPHISTICATED TRANSPORT MODELING

One of AutoMod's strong points is the sophistication of its handling of transport or movement systems. This includes things like conveyors and AGVs (automated guided vehicles), as well as storage and retrieval, and even bridge cranes. Automated storage and retrieval systems (AS/RS) are systems of racks for storing and picking up loads. These storage racks are arranged along aisles in parallel.

You can provide sophisticated detail and flexibility for transport models in AutoMod by using control points and blocks. Control points are positions on a guidepath where a vehicle has the options of stopping, receiving instructions, or both. Vehicles may lay claim to up to two control points at the same time.

A simple form of "collision control" is provided by blocks, which offer control over areas where various different movement systems such as conveyors, AGVs, and power & free systems can interact. Blocks typically define a larger area than control points. The default shape for a block is a cube that can be inserted at some location in movement paths. In order to avoid collisions with other vehicles and transport systems, an AGV moves along guide paths and lays claim to blocks or control points.

LOAD SCHEDULING

Most of the simulation scheduling in AutoMod is handled by lists. At first, it may be a little hard to keep track, but the reward of paying attention to the way these lists are set up is that you really get a look at how a tool like AutoMod works "under the hood."

AutoMod provides five different ways of scheduling vehicles—work lists, park lists, vehicle activation lists, load activation lists, and vehicle search lists—each of which uses a different type of list. Of these, three are activated when empty vehicles are found, and two by loads waiting for pickup. These work with two other kinds of list, the current events list and order lists.

The current events list is a main storage area that contains all the loads and vehicles that have to perform some action before the

Apple® Macintosh® And E·n·h·a·n·c·e·m·e·n·t·s

Apple® Macintosh® Powerbook™ 145 4/40

The Apple® Macintosh® PowerBook™ 145 computer is designed for those who want solid Macintosh performance and flexibility in a convenient, take-it-anywhere notebook computer. Although it fits easily in your briefcase, this innovative notebook computer offers the full power and ease of Macintosh computing.

#1720866



\$1999

Apple® Macintosh® Powerbook™ 160 4/40

The Apple® Macintosh® PowerBook™ 160 computer gives you flexibility and power in an incredibly compact notebook computer. Its 16-level gray-scale display and video-out capabilities make it a good choice for anyone who works outside the office and needs a notebook computer for customer and client presentations. The PowerBook 160 comes with 4 megabytes of RAM, expandable to 14MB. So it can run virtually all the applications you want. Comes with a 80MB hard disk drive. Plus, the PowerBook 160 has built-in support for a variety of monochrome and color displays. Limited supply on hand.

#1738270



\$2199

Apple® Macintosh® Powerbook™ 180 4/80

The Apple® Macintosh® PowerBook™ 180 computer is the most powerful member of the PowerBook family of notebook computers. It combines incredible speed with high performance and the best screen quality available today, to give you a notebook that's flexible, functional, portable, and powerful. The PowerBook 180 has everything you need for impressive client presentations. Video-out capabilities let you work on a variety of external displays, both monochrome and color. It comes standard with 4 megabytes of RAM and a built-in modem, and runs applications up to 50 percent faster than the PowerBook 140.

#1738306



\$3999

Apple® Macintosh® PowerBook 210 4/80

68030 35MHz CPU • 80MB Hard Drive
4MB RAM Expandable to 12MB
2 Expansion Slots • Serial Port
Docking Connector • Power Adapter Port
Modem Port • 9" Backlit Supertwist Display • Nickel-hydrate Battery • Built-In AppleTalk

#1738339



\$1993

Apple® Macintosh® PowerBook Duo™ 230 4/80

68030 33MHz CPU • 80MB Hard Drive
4MB of RAM Expandable to 24MB
2 Expansion Slots: 1 for Modem/ 1 for RAM
Serial Port • Docking connector
Power adapter Port • Modem port
9" Backlit Supertwist Display
Nickel-Hydrate Battery
Built-In AppleTalk

#1738340



\$2399

Apple® Macintosh® PowerBook Duo™ Dock

- PowerLatch docking technology for easy, automatic, one-step docking
- Internal 1.4 MB Apple SuperDrive
- Built-in video support for 256 colors, expandable to 32,000 colors
- Supports most Apple displays, including the Macintosh 16" Color Display, as well as some VGA and SVGA displays
- Two NuBus expansion slots
- 10 built-in ports, including SCSI port for up to six peripherals, such as an external hard disk or CD-ROM drive
- Security key for locking PowerBook Duo and slot for a security cable

#1738432



\$1079

DeskWriter 550C Color InkJet Printer

COLOR INKJET OUTPUT AT 300 DPI!
Prints in Color or Black and White at the same time.
LocalTalk Interface • 100 Sheet Paper Feeder
Whisper Quiet
3 Year Warranty
35 Scalable fonts
Built-in spooler

#1733699

\$724⁹⁵

FOTOMAN™ DIGITAL CAMERA FOR COMPUTERS From Camera To Computer Instantly!

For the Macintosh.
Fotoman™ lets you add full 256 gray scale images to your documents with just the press of a button. There's no film, no developing and no waiting! Small and lightweight. Takes up to 32 pictures at a time from distances of three feet to infinity. Preview, select and then edit your photos. Enhance photos with PhotoTouch. Save images in TIFF, EPS, PEX and BMP formats. Comfortable for right or left-handed use. Built-in flash for great indoor pictures.

#1713028

\$599⁹⁵

CREATIVE VIDEO MULTIMEDIA MIXER VDECK BY SONY.

#1640296

\$339⁹⁵

VIDEO MULTIMEDIA MIXER VDECK BY SONY.

#1640296

\$299⁹⁵

MIRACLE PIANO TEACHING SYSTEM

First piano that teaches you how to play it! Enjoy video games while mastering basic piano techniques. Customizes individual learning with creative, interactive software.

#1678019

\$399

FARALLON APPLETALK CONNECTOR

Apple MAC phone connector
BIM-B
PIN-3000
#1743872

\$16⁹⁹

ASANTE POWERBOOK ETHER

Ether External For Apple
Powerbook • Thick and Thin
10T As 09-00601-01

#1717446

\$399

MAGNAVOX 14" MAC COLOR DISPLAY

640 X 480 • .29 Dot Pitch
WITH CABLES
For MAC II Si Ci #1748516

#1748516

\$399

SAMPO 14" MAC VGA MONITOR

30 TO 40 KHZ WORKS WITH ALL
MAC EXCEPT QUADRA
28 DOT
14" LARGE SCREEN

SAMPO
KDM-1455A
#1735381

\$369⁹⁵

POWER PORT BRONZE FAX MODEM FOR POWERBOOK

PowerPort Bronze adds affordable
send and receive fax and data modem services
to your Macintosh Powerbook. PowerPort
Bronze lets you send and receive faxes at 3600 bps and
receive faxes at 4800 bps. PowerPort Bronze
is fully internal and fully compatible. It fits
completely inside the modern slot of any
Powerbook computer
and doesn't require a
separate battery
or power supply.

#1748516

\$199⁹⁵

88MB REMOVABLE HARD DRIVE

Mechanism Uses Syquest
Removable Cartridge
One Cartridge
Included.
#1829891

\$699⁹⁵

MacIntax 1040

MacIntax gives you total control
over completing your tax return.
It's convenient status bar lets you
click on a button and jump right to
the tax help you need. It imports
figures from Quicken and
other financial
software
packages. It's
system
compatible and
includes balloon
help.

#147670

\$44⁹⁵

Apple® System 7

Macintosh® System 7 is one of
the most significant advances in
personal computing since the
introduction of MAC. It gives your
MAC powerful, new capabilities
and makes it even easier to use.
It also paves the
way for a new
generation of
advanced MAC
application.
MAC
#1699898

#1699898

\$99⁹⁵

Microsoft Excel 4.0 For Mac

MS Excel leads the Macintosh
spreadsheet market in ease of
use, design innovation, and
integration. New features of 4.0
include: Drag & Drop •
Customizable Toolbars
Auto Fill/Auto Fill
Auto Select •
Shortcut Menus
View manager and
a lot more.
MAC
#1705500

#1705500

\$288

FileMaker Pro

FileMaker Pro is the #1
data base manager for the
MAC. It lets you create as
many files as you need to
organize your
information.
MAC
#1731686

#1731686

\$279

Home of Fast, Friendly,
Courteous Service

FRY'S ELECTRONICS

Prices good through
March 1, 1993

Limit Rights Reserved
Not Responsible For
Typographical Errors

HOURS:
MON-FRI
8AM-9PM
SATURDAY
9AM-8PM
SUNDAY
9AM-7PM

VISA AND
MASTERCARD

CORPORATE P.O. FAX #

SUNNYVALE
1177 Kern Ave.
(408) 733-1770
(408) 735-6800

PALO ALTO
340 Portage Ave.
(415) 496-6000
(415) 496-6060

FREMONT
440 Mission Ct.
(510) 770-FRYS (3797)
(510) 770-3700

386SX 25MHz

14" COLOR VGA SYSTEM

80386SX 25MHz CPU
3.5" 1.44MB Floppy Disk Drive
1MB RAM Expandable to 16MB
40MB Hard Drive
14" Color VGA Display
Clock/Calendar
101-Key Keyboard
80 X 600 VGA CARD • MS Windows
#1644496

\$699

486SX 33MHz

105MB VGA SYSTEM

80486SX 33MHz CPU
1MB RAM Expandable To 32MB
105MB IDE Hard Drive
3.5" 1.44MB Floppy Drive
800 X 600 VGA Card
14" Color VGA Display
101-Key Keyboard
Clock/Calendar
3M Cleaning Kit
#1726426

14" COLOR
DISPLAY
INCLUDED

\$999⁹⁵

486DX-50MHz

DESKTOP SYSTEM

80486DX 50MHz CPU
64K Cache
1MB RAM Expandable to 32MB
3.5" 1.44MB Floppy Drive
IDE 2 Hard/2 Floppy Controller
Power Supply
101-Key Keyboard • Clock/Calendar
Case
#1739514

\$999

486DX-2 66MHz

MINI TOWER SYSTEM

64K CACHE EXPANDABLE TO 256K

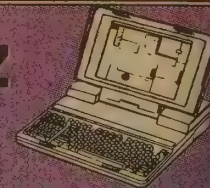
80486DX2 66MHz CPU
1MB RAM Expandable to 32MB
IDE 2 Hard/2 Floppy Controller
3.5" 1.44MB Floppy Disk Drive
101-Key Keyboard
Clock/Calendar • Case • Power Supply
#1743636

\$1099

386SX 20MHz

80MB NOTEBOOK

80386SX 20MHz
80MB Hard Drive
3.5" 1.44MB Floppy Disk Drive
2MB RAM • Serial/Parallel Ports
VGA Output • 2Hrs Battery
#1752753

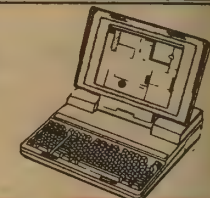


\$999

386SX-25MHz

80MB NOTEBOOK

80386SX 25MHz
80MB Hard Drive
3.5" 1.44MB Floppy Disk Drive
2MB RAM
Serial/Parallel Ports
VGA Output
2.5Hrs Battery
#1756609



\$1199

MOTHERBOARDS

386SX-25MHz \$109⁹⁵

#1634334

386SX-40MHz \$149⁹⁵

#1757943

386DX-40MHz \$219⁹⁵

#1735200

LOCAL BUS VESA

486DLC-33MHz \$399⁹⁵

#1754962

486DX-50MHz \$799⁹⁵

#1757954

486DX2-66MHz \$999⁹⁵

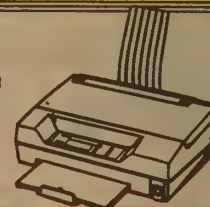
#1754973

EPSON[®] ActionPrinter[™] 2250

9 PIN IMPACT

DOT MATRIX PRINTER

50 Sheet Paper Cassette Tray
240 CPS Draft, 48 CPS NLQ
Quiet • 2 Year Warranty
#1729120



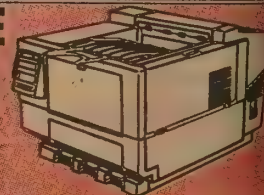
\$159

12 PAGES PER MINUTE

LASER PRINTER

HP LASERJET COMPATIBLE

82 Fonts • 12 Pages Per Minute
Single Bin Feed • Serial/Parallel
250 Sheet Paper Tray • 90 Day Warranty
Emulations: HP LaserJet Series II
Diablo 630 ECS • Epson FX-85
IBM Proprinter XL #1720556



\$899



Charlie Chip Says:
"Your Best Computer Buys Are
Always At..."

Fry's ELECTRONICS

DISKETTE CORNER

DC2120 120MB DATA CARTRIDGE

Unformatted • 1/4" Tape • Dual Belted
3M 2120 Compatible
Works with Summit 120MB Back-up
& Colorado DJ10 Back-up
Lifetime Warranty
#1708514

\$16⁹⁵
#1623684

POLAROID 5.25" DS/DD DOUBLE SIDED DOUBLE DENSITY DISKETTES

BOX OF TEN #1750108

\$2⁹⁹

1024 X 768 NON-INTERLACED 14" SUPER VGA MONITOR

1024 X 768 • .28 Dot Pitch
Non-Interlaced • One year Warranty
#1763148



\$349⁹⁵

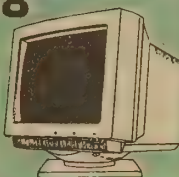
1280 X 1024 24-BIT SUPER VGA CARD

16 Million Color Capable
1280 x 1024 Max Resolution
Windows Accelerator VESA 72Hz
#1750485

\$99⁹⁵

1024 X 768 14" SUPER VGA MONITOR

1024 X 768 • .39 Dot Pitch
Interlaced • One year Warranty
#1643705



\$239⁹⁵

SONY MULTIMEDIA DESKTOP LIBRARY CD-ROM SYSTEM

Multimedia CD-ROM Starter Kit:
• Half-height internal Sony CD-ROM drive
• Includes the following CD-ROM titles:
GEO Works CD-ROM Manager and Tempura
Access
New Grolier Multimedia Encyclopedia
Great Wonders of the World, Volume 1

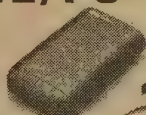
Also Includes:
Interface
and all cables
MODEL
CDU-31A-LL/N
#1747054



\$429⁹⁹

MAX MAXLITE/PC 14,000 POCKET MODEM SEND/RECEIVE FAX

V.32bis • Winfax #1695366



\$299

DETER DATA DISASTER BACK UPS 250

Modified Sine wave output
safer for all equipment
types than square wave
250 Volt/AMP Backup
Power Supply • 8 Outlet
EMI/RFI filtering • DB9
10 Minutes Back-Up At 250VA
#1651164

\$25,000
EQUIPMENT
WARRANTY

American Power Conversion

\$119⁹⁹

AVOID SYSTEM MELTDOWN 7 OUTLET SURGE ARREST

APC Surge Arrest
240 Joule Dissipation
EMI/RFI Filtering
Status and Warning Faults Lets
#1651256

\$1,000
EQUIPMENT
WARRANTY

\$19⁹⁹

SyDOS

88MB PARALLEL REMOVABLE EXTERNAL DISK DRIVE

With integrated parallel adapter.
Runs off parallel port. Runs with any IBM compatible. Uses 88MB
Syquest cartridges #1716700 SYDOS PUMA

\$499⁹⁵

THE COMPLETE OFFICE SOLUTION Full Page Scanner 9600B Fax/2400B Modem

256 Greyscale 300 dpi Full Page Scanner
2400 Baud Modem/9600 Baud Fax
Rapid Fax: Windows Compatible Fax Software
#1755941

The Complete PC

\$549⁹⁹

120MB IDE HARD DRIVE

19 msec Access
IDE Hard Drive
#1746868

\$239

ACECAT PC GRAPHICS TABLET & MOUSE EMULATOR

1000 Lines Per Inch
5" X 5" Active Area. Includes
Stylus-Pen and Comprehensive Utilities
Diskette Including Custom Drivers for Mouse,
Windows, Control Panel and ADI.
#1659900

\$109⁹⁸

LOGITECH
FIRST IN CONVENIENCE, FIRST IN QUALITY AND
FIRST IN ECONOMY
Three programmable buttons offer you maximum
flexibility. Includes Mouse Software for extra
convenience. Guaranteed to work with all your
applications
#1604667

\$39⁹⁹

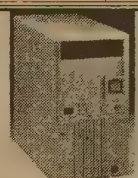
5.25" DISK HOLDER

Holds 10 disks.
Blue Color
SRW-22-04-002-blue
#1433652

\$1⁹⁹

MINI TOWER COMPUTER CASE WITH 200 WATTS OF POWER

#1742428



\$59⁹⁵

DANDY 3400 SCSI FLOPPY/ HARD SCSI CONTROLLER

Controller for IBM/COMP.
Future Domain chip set
#1700538

\$69⁹⁵

MEMOREX COMPUTER SUPPLIES UNIVERSAL RADIATION FILTERS

For monitors up to 15" Diagonal
99% Glare Reduction
98% Very Low Frequency & Extremely Low Frequency
E-Field Radiation Protection
#1672921

\$49⁹⁵

SPACE SAVING SOLUTION UNIVERSAL SYSTEM STAND

Vertical CPU stand frees up valuable desk space.
Adjustable stand holds units from 4.5" to 6.25"
#1619403

\$5⁹⁹

PARALLEL KANSAI PRINTER BUFFER

EXPANDABLE TO 8MB
USING 1 X 8 SIMM MODULES
27K Per Second Input
15K Per Second Thru-put
#1711462

\$144⁹⁶

HOME OF FAST, FRIENDLY,
COURTEOUS SERVICE

Fry's ELECTRONICS

Limit Rights Reserved
Not Responsible For
Typographical Errors

Prices good thru
March 1, 1993

STORE HOURS
MON - FRI
8AM - 9PM
SATURDAY
9AM - 8PM
SUNDAY
9AM - 7PM

SUNNYVALE 1177 Kern Ave. (408) 733-1770
CORPORATE P.O. FAX # (408) 735-6800
PALO ALTO 340 Portage Ave. (415) 496-6000
CORPORATE P.O. FAX # (415) 496-6060
FREMONT 440 Mission Ct. (510) 770-FRYS(3797)
CORPORATE P.O. FAX # (510) 770-3700

VISA
MasterCard
VISA
and
MasterCard
Accepted

386SX-25MHz MINI TOWER SYSTEM

80386SX 25MHz CPU
2 Hard / 2 Floppy Disk Controller
1MB RAM Expandable to 16MB
3.5" 1.44MB Floppy Drive • Keyboard
Clock/Calendar • Case / Power Supply
#1659210

\$299⁹⁵

MORE COMPUTER BUYS FROM FRY'S!

486-33MHz MINI TOWER SYSTEM CYRIX 486DLC CPU

80486DLC 33MHz CPU • 3.5" 1.44MB Floppy Disk
2 Hard/2 Floppy Disk Controller
1MB RAM Expandable to 32MB
101-Key Keyboard • Clock/Calendar
Case / Power Supply
#1743603

\$499

TOSHIBA T1800



20MHz 386SX

80386SX 20MHz • 60MB Hard Drive
3.5" 1.44MB Floppy Disk Drive
2MB RAM • Serial/Parallel VGA
Power Management Capabilities #1722466

\$1399

IBM PS/1 EXPERT Intel 386™ SL-25MHz NOTEBOOK



80MB Hard Drive
2MB RAM Expandable to 16MB
3.5" 1.44MB Diskette Drive
2400 bps Internal Modem
IBM Tracking Device
• Novell® certified
• IBM Quality and Reliability
The PS/1 Expert is built to IBM's exacting standards for quality and reliability.

*IBM and Personal System/1 are registered trademarks of International Business Machines Corporation.



Model 2141-S82
#1709065

All You Need In One Box!
• Preloaded Software

IBM DOS 5.0
Microsoft® Windows™ 3.1
MS Works for Windows
Tutorial, Index • PRODIGY®
Fitness • Virus check,
Promenade™
• Address Book Plus®
• Support and Service
The exclusive online PS/1 Club™
answers your computing questions
20 hours a day, 365 days a year.

\$1999

LEADING EDGE 386SX-25MHz 80MB NOTEBOOK



386SX 25MHz CPU • 4MB RAM
3.5" 1.44MB Floppy Drive • VGA Output
80MB Hard Drive • Microsoft DOS 5.0
Window Works • Power Management Capability
#1753190

\$1599

FULL TOWER COMPUTER CASE



WITH 250
WATTS OF POWER
#1742451

\$119⁹⁵

MOTHERBOARD LOCAL BUS VESA



486DX-2/66MHz

486DX2-66MHz Local BUS VESA
2 Local Bus Slots, 1 Master,
1 Slave #1754973

\$999⁹⁵

SONY 1024 X 768 NON-INTERLACED MONITOR



1024 X 768 72Hz
Non-Interlaced
.25mm Dot Pitch
110/220
Microprocessor
Control
Model 1430 #1756388

\$649⁹⁵



MULTIMEDIA HI-COLOR 24-BIT CARD

Genoa 7900 Multimedia
24-Bit Color • VGA Card
16 Million Colors In 640 X 480 Mode
Up to 1024 X 768 • #1696301

\$139⁹⁵

5.25" DS/HD PREMIUM DISKETTES

With Labels, Tyvek Sleeves
And Write Tabs

LIFETIME WARRANTY

37¢ EACH

#136327
Sold in packages of 25 only for \$9⁹⁵

PACIFIC
DATA PRODUCTS

4MB MEMORY

For LaserJet 4, IIISI,
PaintJet XL 300 and
DesignJet Plotter
MS400 #1738225

\$199⁹⁹

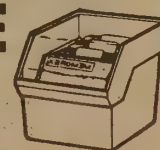
IDE CACHE CONTROLLER 512K Cache

Expandable to 8MB
#1716995

\$159⁹⁵

3.5" DISK FILE

Holds 50
Diskettes
by Inland
#1666988



\$3⁹⁹

PLENTIFUL POSITIONAL
POTENTIALITY!

MONITOR ARM

Holds Monitors with a 12" x 12"
separation up to 40 lbs. Built-in
chrome handle extends to hold
9 1/4" wide keyboard.
Made of platinum colored steel
8 lbs.

MicroComputer
Accessories, Inc.
MODEL
6150
#1544532

Home of Fast, Friendly,
Courteous Service

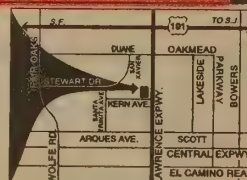
Fry's ELECTRONICS

Prices good thru
March 1, 1993

HOURS:
MON-FRI
8AM-9PM
SATURDAY
9AM-8PM
SUNDAY
9AM-7PM

VISA AND
MASTERCARD

CORPORATE P.O. FAX #



SUNNYVALE
1177 Kern Ave.
(408) 733-1770
(408) 735-6800



PALO ALTO
340 Portage Ave.
(415) 496-6000
(415) 496-6060



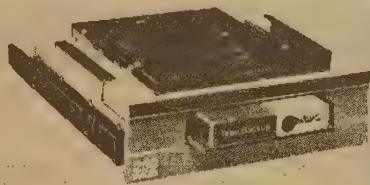
FREMONT
440 Mission Ct.
(510) 770-FRYS (3797)
(510) 770-3700

Limit Rights Reserved
Not Responsible For
Typographical Errors

COLORADO MEMORY SYSTEMS INC.

COLORADO DJ-10 120MB TAPE BACK-UP

40/60/120MB FORMAT
BackUp Any Size Drive From
40MB to 120MB
Runs Off Floppy
Disk Controller
Internal XT/AT Drive

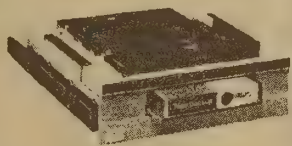


\$199⁹⁵

#1498817

JUMBO 250MB TAPE BACK-UP

40/80/120/250MB Format
Internal Drive Runs Off Floppy Controller
Uses DC-2000 Tapes
Model DJ-20

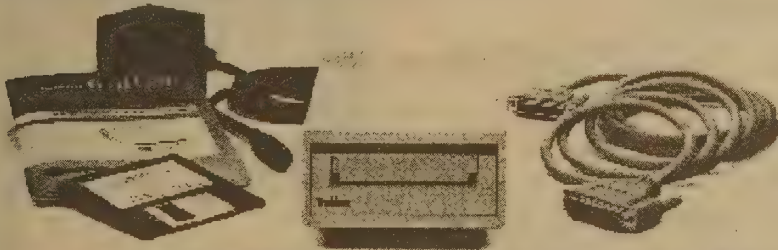


\$299⁹⁵

#1610068

Jumbo Trakker™ Parallel Printer Port Tape Backup System

Plug and Play. No hardware installation. Trakker connects to your computer's parallel printer port.
Full Compatibility. Works with any computer with an IBM® compatible parallel printer port.
Dual Connectors on Back Panel. Trakker and printer share a parallel printer port.
Trakker Portability. Easily shuttles between laptops and desktops.
QIC-40 and QIC-80. Industry Standard Recording Format for data interchange.



120MB

#1740792

\$399

250MB

#1740806

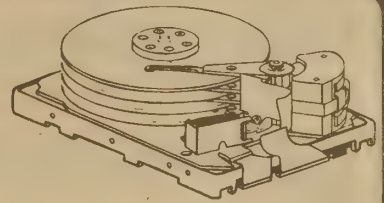
\$444

Maxtor

7120A

120MB IDE HARD DRIVE

3.5" X 1" HT
17MS Access Time
#1611508

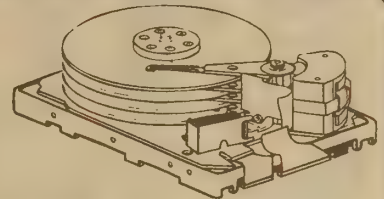


\$249

7213A

213MB IDE HARD DRIVE

3.5" X 1" HT • 15MS Access Time #1694044

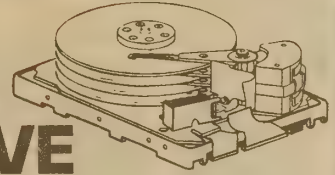


\$359

LXT-340A

340MB 3.5" IDE HARD DRIVE

3.5" HT • 15MS Access Time
#1625653

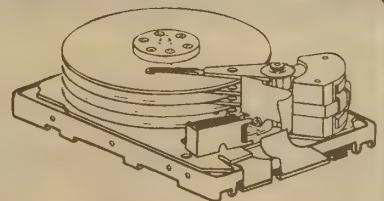


\$599⁹⁵

7213S

213MB SCSI HARD DRIVE

1" HT • 15MS Average Access Time
#1735358



\$399⁹⁵

Home of Fast, Friendly,
Courteous Service

fray's ELECTRONICS

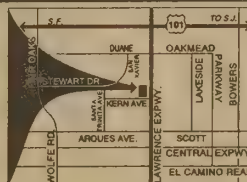
Prices good through
March 1, 1993

Limit Rights Reserved
Not Responsible For
Typographical Errors

HOURS:
MON-FRI
8AM-9PM
SATURDAY
9AM-8PM
SUNDAY
9AM-7PM

VISA
MASTERCARD
VISA AND
MASTERCARD

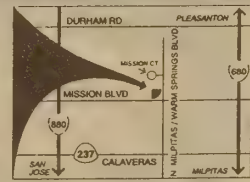
CORPORATE P.O. FAX #



SUNNYVALE
1177 Kern Ave.
(408) 733-1770
(408) 735-6800



PALO ALTO
340 Portage Ave.
(415) 496-6000
(415) 496-6060

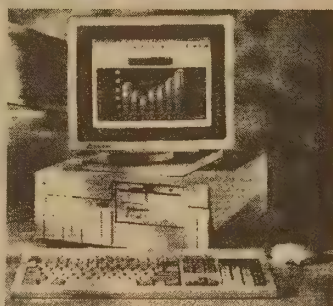


FREMONT
440 Mission Ct.
(510) 770-FRYS (3797)
(510) 770-3700

LEADING EDGE

486SX-25MHz 107MB SYSTEM

80486SX 25MHz CPU
107MB Hard Drive
2MB of RAM • 64K Cache
5.25" 1.2MB &
3.5" 1.44MB Floppy Drive
101-Key Keyboard
1024 x 768 SVGA Adapter
1 Parallel/2 Serial Ports • MS DOS 5.0 • MS Windows
Window Works • Monitor not included #1726390



486SX-33MHz 107MB SYSTEM

80486SX 33MHz CPU • 107MB Hard Drive
2MB of RAM • 64K Cache
5.25" 1.2MB & 3.5" 1.44MB Floppy Drives
101-Key Keyboard
1024 x 768 SVGA Adapter
1 Parallel/2 Serial Ports • MS DOS 5.0
MS Windows • Window Works
Monitor not included
#1748284



\$1099

ONE YEAR
ON-SITE
WARRANTY!

\$1299

ONE YEAR
ON-SITE
WARRANTY!

486DX-50MHz 213MB SVGA COMPUTER

80486 50MHz DX2 CPU
4MB of RAM Expandable to 32MB
5.25" 1.2MB &
3.5" 1.44MB Floppy Drive
101-Key Keyboard & Mouse
HR Video Adapter with 512K.
2/Serial 1/Parallel 1/Mouse Port
Software Included: Microsoft DOS 5.0
Microsoft Windows
Microsoft Windows Works
Wordprocessor • Spreadsheet • Data
Base • Virus Protection Software • Monitor
Not Included #1694055



386SL 25MHz COLOR NOTEBOOK 80MB HARD DRIVE

2MB RAM Expandable to 10MB
3.5" 1.44MB Floppy Disk Drive
80MB Hard Drive • VGA Output
Microsoft DOS 5.0 #1704543

\$1899

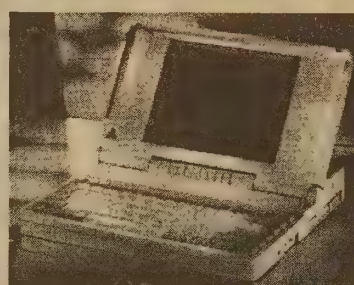
ONE YEAR
ON-SITE
WARRANTY!

\$1999

ONE YEAR
ON-SITE
WARRANTY!

386SL-25MHz 60MB NOTEBOOK

60MB Hard Drive
2MB of RAM • 32K Cache
3.5" 1.44MB Floppy Drives
VGA • Mouse
MS DOS 5.0 • Window Works
#1757666



386SL-25MHz 80MB FULLY-FEATURED LEGAL SIZE NOTEBOOK

80MB Hard Drive
2MB of RAM • 32K Cache • 3.5" 1.44MB Floppy Drive
Track Ball Built-In Fax/Modem • VGA 64 Shades of Grey
Numeric Pad Built-In • MS DOS 5.0 • Window Works
#1757677



\$1399

ONE YEAR
ON-SITE
WARRANTY!

\$1799

ONE YEAR
ON-SITE
WARRANTY!

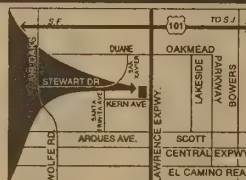
Fry's ELECTRONICS
Prices good through
March 1, 1993
Limit Rights Reserved
Not Responsible For
Typographical Errors

Home of Fast, Friendly,
Courteous Service

STORE HOURS:
MON-FRI
8AM-9PM
SATURDAY
9AM-8PM
SUNDAY
9AM-7PM

VISA AND
MASTERCARD

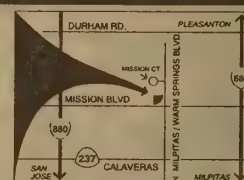
CORPORATE P.O. FAX #



SUNNYVALE
1177 Kern Ave.
(408) 733-1770
(408) 735-6800



PALO ALTO
340 Portage Ave.
(415) 496-6000
(415) 496-6060



FREMONT
440 Mission Ct.
(510) 770-FRYS (3797)
(510) 770-3700

The Complete PC

The Complete Communicater Gold

A personal communications center for your PC which combines advanced, high-speed facsimile (9600 bps), sophisticated voice mail and a 9600 bps V.42bis data modem on a single add-in card. Runs completely in background mode. Send faxes to an individual or to a group of people and schedule calls. Voice messaging & call processing, including password-protected mail boxes, message forwarding and complete remote access.

#1733172

\$499

The Complete Communicater

A personal communications center for your PC which combines advanced, high-speed facsimile (9600 bps), sophisticated voice mail and a 2400 bps data modem on a single add-in card. Runs completely in background mode. Send faxes to an individual or to a group of people and schedule calls. Voice messaging & call processing, including password-protected mail boxes, message forwarding and complete remote access.

#1477762

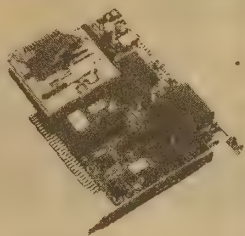
\$149*

*AFTER \$150 FACTORY REBATE
IN-STORE PRICE \$299

TurboModem^{PLUS} Internal

- TurboModemPlus Internal V.32 bis/v.42 bis Data Modem and Fax Card
- Telephone Cord
- Powerful Data Communications Software
- User Guides

#1733183



\$299

TurboModem^{PLUS} External

- TurboModemPlus External V.32 bis/v.42 bis Data Modem & Fax Unit
- Telephone Cord
- AC Adaptor(115V AC)
- Powerful Data Communications Software
- User Guides

#1733194



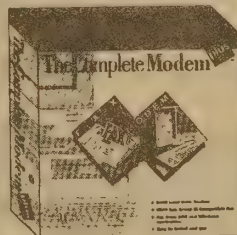
\$299

The Complete Modem Plus

**9600 Baud FAX
2400 Baud Modem**

Windows/DOS applications
Background Operation

#1644429



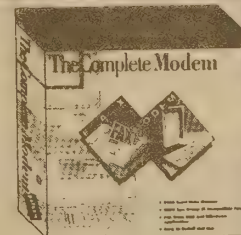
\$99⁹⁵

The Complete Modem

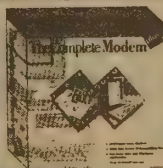
**9600 Baud Fax
2400 Baud Modem**

DOS Applications
Background Operation

#1699267



\$69⁹⁵



The Complete Modem Plus with RapidFax Software

9600 Baud FAX/2400 Baud Modem

Windows/DOS applications • Background Operation • RapidFax Communication Software

#1755918

\$119

**Home of Fast, Friendly,
Courteous Service**

fry's ELECTRONICS

Prices good through
February 1, 1993

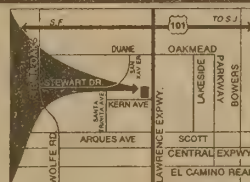
Limit Rights Reserved
Not Responsible For
Typographical Errors

STORE HOURS:

MON-FRI
8AM-9PM
SATURDAY
9AM-8PM
SUNDAY
9AM-7PM

VISA
AND
MASTERCARD

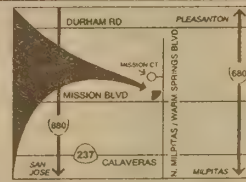
CORPORATE P.O. FAX #



SUNNYVALE
1177 Kern Ave.
(408) 733-1770
(408) 735-6800



PALO ALTO
340 Portage Ave.
(415) 496-6000
(415) 496-6060



FREMONT
440 Mission Ct.
(510) 770-FRYS (3797)
(510) 770-3700

US Robotics

The Intelligent Choice in Data Communications

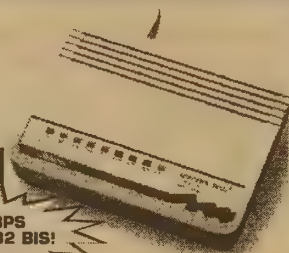
SPORTSTER

**14,400 BAUD
EXTERNAL MODEM
WITH 9600
BAUD FAX**

V.32BIS, V.42/MNP2-4,
V.42BIS/MNP 5
WITH 57,600BP

#1704495

\$359



UP TO 57,600 BPS
THRU-PUT WITH V.32 BIS!

SPORTSTER

**14,000 BAUD
INTERNAL MODEM
WITH 9600
BAUD FAX**

V.32BIS, V.42/MNP2-4,
V.42BIS/MNP 5
WITH 57,600BP

#1704484

\$329



UP TO 57,600 BPS
THRU-PUT WITH V.32 BIS!

COURIER™

**14,400
HST DUAL STANDARD
BAUD MODEM**

MNP1-5

US Robotics HST Dual Standard Modems
14,400 Baud Courier
V.32BIS, V.32,
V.42, V.42BIS
External
US Robotics #0066-00
#1639074

\$799⁹⁵

FREE UPGRADE TO
28,800 BPS IF YOU BUY
BY MARCH 31, 1993!



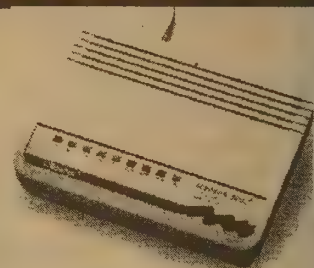
SPORTSTER

**2400 BAUD
EXTERNAL MODEM
WITH 9600
BAUD FAX**

V.42BIS MNP-5, 9600 BAUD DATA
THRU-PUT WITH V.42BIS #1704521

NEW 9600 BAUD
DATA THRU-PUT
WITH V.42 BIS
AND 9600 BAUD FAX!

\$199⁹⁵

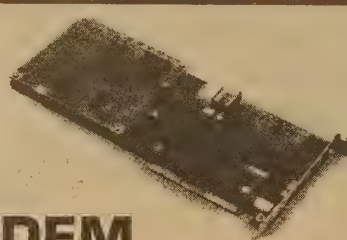


SPORTSTER

**9600 FAX
9600 BAUD
INTERNAL MODEM**

WITH 9600 BAUD MODEM V.32
V.42BIS THRU PUT UP TO
38,000 BPS
US Robotics
#1704509

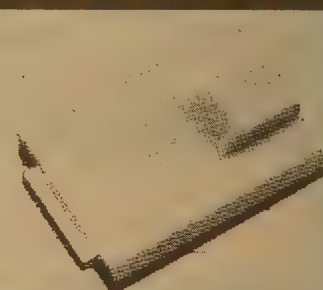
\$299



**WORLD PORT
PORTABLE
9600B V.32
POCKET SIZE
MODEM**

WP9600E-MNP5 MODEM
BATTERY,
0508-0010
#1667576

\$349⁹⁵



Home of Fast, Friendly,
Courteous Service

Fry's

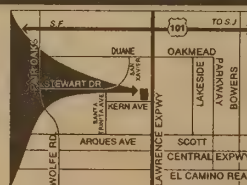
Prices good through
March 1, 1993

Limit Rights Reserved
Not Responsible For
Typographical Errors

HOURS:
MON-FRI
8AM-9PM
SATURDAY
9AM-8PM
SUNDAY
9AM-7PM

VISA AND
MASTERCARD

CORPORATE P.O. FAX #



SUNNYVALE
1177 Kern Ave.
(408) 733-1770
(408) 735-6800



PALO ALTO
340 Portage Ave.
(415) 496-6000
(415) 496-6060



FREMONT
440 Mission Ct.
(510) 770-FRYS (3797)
(510) 770-3700

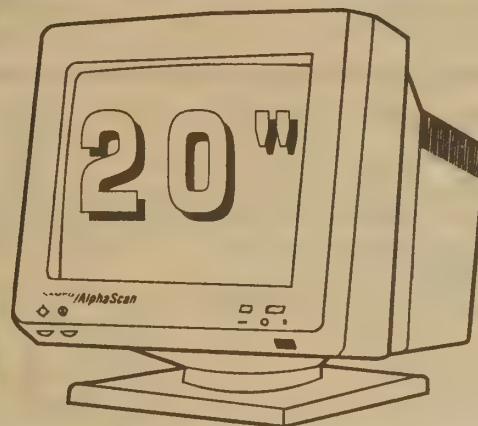
SAMPO

A M E R I C A

1024 X 768 NON-INTERLACED 20" SUPER VGA MONITOR

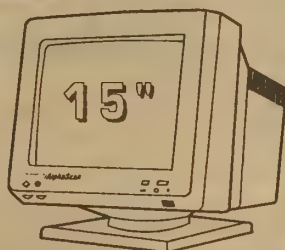
1024 X 768
Non-Interlaced .31 Dot Pitch
Flat Screen
INVAR Shadow Mask
70HZ Refresh VESA
20" Large Screen
SAMPO KDM-2055 #1691764

\$1299



1024 X 768 NON-INTERLACED 15" SUPER VGA MONITOR

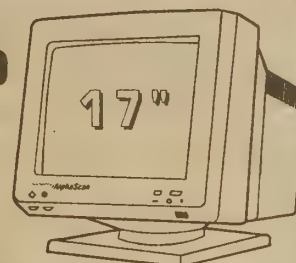
1024 X 768 Non-Interlaced • Flat Screen
INVAR Shadow Mask 70HZ Refresh VESA
15" Large Screen
SAMPO KDM-1566
#1691742



\$529⁹⁵

1280 X 1024 NON-INTERLACED 17" SUPER VGA MONITOR

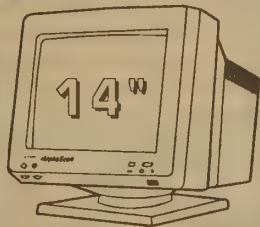
1024 X 768 Non-Interlaced Flat Screen
Up to 1280 x 1024 Resolution
INVAR Shadow Mask
70HZ Refresh VESA
17" Large Screen
SAMPO KDM-1766
#1691753



\$849⁹⁵

14" MAC VGA MONITOR

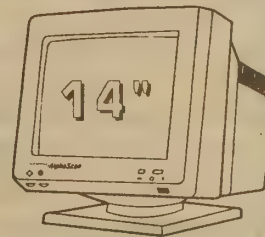
30 TO 40 KHZ WORKS WITH ALL
MAC EXCEPT QUADRA
.28 DOT
14" LARGE SCREEN
SAMPO KDM-1455A
#1735381



\$369⁹⁹

1024 X 768 NON-INTERLACED 14" SUPER VGA MONITOR

1024 X 768 Non-Interlaced
Flat Screen • INVAR Shadow Mask
70HZ Refresh VESA
14" Large Screen
SAMPO KDM-1466
#1691731



\$399⁹⁵

**Home of Fast, Friendly,
Courteous Service**

fray's **ELECTRONICS**

Limit Rights Reserved
Not Responsible For
Typographical Errors

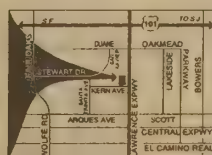
Prices good thru
March 1, 1993

VISA
AND
MasterCard
ACCEPTED



HOURS
MON-FRI
8AM-9PM
SATURDAY
9AM-8PM
SUNDAY
9AM-7PM

CORPORATE P.O. FAX #



SUNNYVALE
1177 Kern Ave.
(408) 733-1770
(408) 735-6800



FREMONT
440 Mission Ct.
(510) 770-FRYS (3797)
(510) 770-3700



PALO ALTO
340 Portage Ave.
(415) 496-6000
(415) 496-6060

intel® intel®

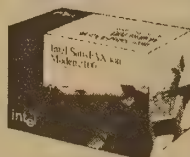
Intel SatisFAXtion. Modem/100

Data. Fax. Great software.

**SATISFAXTION 100 INTERNAL
2400 BAUD MODEM
9600 BAUD FAX**

DOS/Windows
Crosstalk Communication Software
#1699647

\$99⁹⁵



Intel SatisFAXtion. Modem/400

The best modem. The best fax. Communicate with everyone.

**INTERNAL 14,000BPS
BAUD MODEM
9600 BAUD FAX**

14,400 bps External Modem
42 bis DTE
115,200 bps
Smart Line #1699681

\$399⁹⁵



Intel SatisFAXtion. Modem/400e

The best modem. The best fax. Communicate with everyone.

**SATISFAXTION 400e
EXTERNAL
14,000BPS BAUD MODEM
9600 BAUD FAX**

14,400 bps External Modem
42 bis DTE • 115,200 bps
Smart Line #1717815

\$499⁹⁵



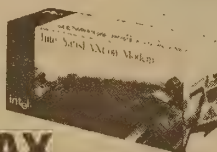
Intel SatisFAXtion. Modem/300

The best modem. The best fax. Communicate with everyone.

**INTERNAL 14,400BPS
DATA MODEM 9600 BPS FAX**

14,400BPS data modem(v.32bis)
Up to 4:1 data compression 57,600bps(v.42bis)
High speed data buffer chip(16550 UART)
9600bps send/receive fax. Software
included: FAX ability Plus, Crosstalk
Communicator and DOS Fax software.
#1744710

\$329



Intel SatisFAXtion. Modem/200

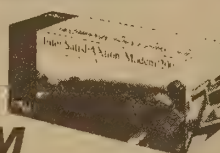
Great looking faxes. A cinch to use.

**SATISFAXTION 200
INTERNAL 2400 BAUD MODEM
9600 BAUD FAX**

9600BPS FAX WITH 2400 V.42BIS
SMART LINE SHARE AUTO FEATURE
#1699706

**AUTO SWITCH
BETWEEN FAX
AND PHONE!**

\$299



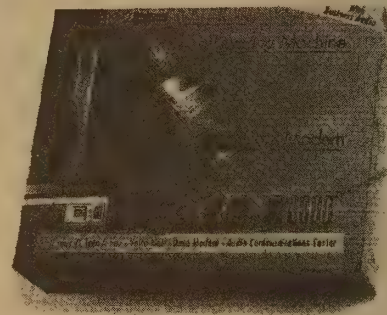
National Semiconductor

COMPUTER ENHANCEMENT GROUP

TyIN 2000™

FAX

- True background operation
- Error correction and advanced image compression for flawless faxes
- Group 3 compliant
- Faxes multiple documents to multiple destinations
- On-screen fax viewing and rotation
- Automatic redialing until line is connected
- Speed dialing with multiple phonebooks
- Automatic cover sheets
- Interfaces to scanner and telephone handset



**VOICE
MAIL**

DATA MODEM

- Up to 9600bps with v.42bis over 2400bps data transmission.
- Data compression with v.42bis and MNP2-4.
- Hayes compatible.

ANSWERING MACHINE

- Unlimited mail boxes and messages (limited only by available disk space).
- Digital voice compression.
- Full call progress and message monitoring
- Remote message retrieval
- Fax-and-touch-tone detection in parallel with outgoing message.
- Time/dating stamping.
- Memo recording.

AUDIO PLAYBACK RECORDER

- Just like an audio Post-it™ Note
- Record and attach a voice memo to a document
- Play it back or send voice memo to another PC where someone can click on a voice icon and hear your message
- Interfaces to external microphone and speaker

\$199⁹⁹

#1743887

Home of Fast, Friendly,
Courteous Service

FRY'S ELECTRONICS

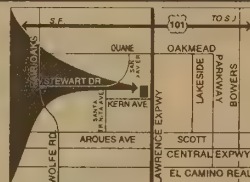
Prices good through
March 1, 1993

Limit Rights Reserved
Not Responsible For
Typographical Errors

**STORE
HOURS:**
MON-FRI
8AM-9PM
SATURDAY
9AM-8PM
SUNDAY
9AM-7PM

VISA AND
MASTERCARD

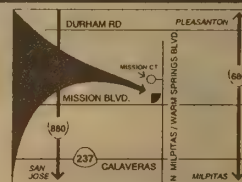
CORPORATE P.O. FAX #



SUNNYVALE
1177 Kern Ave.
(408) 733-1770
(408) 735-6800

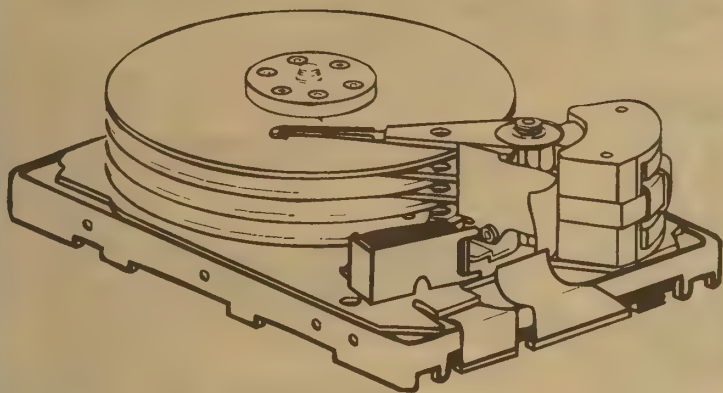


PALO ALTO
340 Portage Ave.
(415) 496-6000
(415) 496-6060



FREMONT
440 Mission Ct.
(510) 770-FRYS (3797)
(510) 770-3700

CONNER PERIPHERALS



SOF-STOR 170MB HARD DRIVE WITH SOFTWARE BUNDLE

HARD DRIVE PRE-FORMATTED WITH MS-DOS 5.0
ALL SOFTWARE INSTALLED • MS-WIN 3.1
WINDOW WORKS • MS PUBLISHER
ANTI-VIRUS • SMART CO-EXIST IDE CONTROLLER
CONTROLS UP TO 2 IDE HARD DRIVES AND
2 FLOPPIES • CONTROLS 2.88MB, 1.44MB OR
720K FLOPPIES #1753075

\$439⁹⁵

SUMMIT
MEMORY SYSTEMS INC.

SUMMIT
MEMORY SYSTEMS INC.

SUMMIT
MEMORY SYSTEMS INC.

SUMMIT
MEMORY SYSTEMS INC.

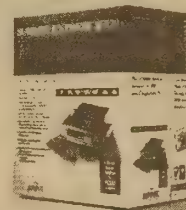
SUMMIT
MEMORY SYSTEMS INC.

SUMMIT
MEMORY SYSTEMS INC.

WINDOWS ENVIRONMENT 120MB TAPE BACK-UP

Now you can safeguard your data and end the drudgery of floppy disk backup. Check out this value! A field-proven high quality tape drive 40/60/80/120MB BACKUP Dual Media Central Point Back-Up software for DOS and Windows, plus virus detection 2 year warranty 60 day satisfaction or your money back guarantee.

SE120 #1635575



\$199

SUMMIT EXPRESS 250MB TAPE BACK-UP

Now you can safeguard your data and end the drudgery of floppy disk backup. Check out this value! A field-proven high quality tape drive 40/60/80/120/250MB Backup Dual-media Central Point Backup software for DOS and Windows, plus virus detection 2 year warranty 60 day satisfaction-or-money-back guarantee

Model SE250 #1635586

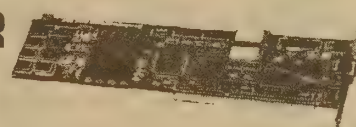


\$299⁹⁵

ACCELERATOR BOARD

FOR SE120 AND SE250
SPEEDS UP BACK-UP THRU-PUT TO 7MB A MINUTE!

#1651186

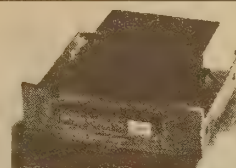


\$89⁹⁵

SUMMIT EXPRESS 305MB TAPE BACK-UP INTERNAL IDE

Now you can safeguard your data and end the drudgery of floppy disk backup. A field-proven high quality tape drive. High-Speed Backup up to 12MB per minute. Runs off IDE Hard Drive Controller • 2 year warranty 60 day satisfaction-or-money-back guarantee

Model SE305 #1659405



\$339

EXTERNAL CASING FOR SE120 AND SE250

#1735266

\$69⁹⁹

Home of Fast, Friendly,
Courteous Service

Fry's ELECTRONICS

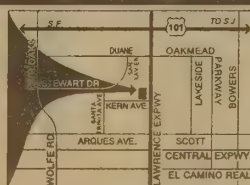
Prices good through
March 1, 1993

Limit Rights Reserved
Not Responsible For
Typographical Errors

STORE HOURS:
MON-FRI
8AM-9PM
SATURDAY
9AM-8PM
SUNDAY
9AM-7PM

VISA AND
MASTERCARD

CORPORATE P.O. FAX #



SUNNYVALE
1177 Kern Ave.
(408) 733-1770
(408) 735-6800



PALO ALTO
340 Portage Ave.
(415) 496-6000
(415) 496-6060



FREMONT
440 Mission Ct.
(510) 770-FRYS (3797)
(510) 770-3700



Parana Printer Ribbons Make a Great Impression.™

FOR EPSON

202S Black \$3.99
For Models FX1050, MX100 #1595273

204S Black \$4.99
For Models LQ1050, LQ1010, LQ1000 #1595675

205S Black \$4.99
For Model LQ2550 #1611874

207S \$14.95
For Models DFX-5000/8000 #1647341

208S Black \$4.99
For Models EX800, EX1000 #1611885

FOR CITIZEN

131S \$4.95
For Models 12D, 180D, GSX-140, GSX-200 BLACK #1595251

132S COLOR \$14.95
For Model GSX-140 FOUR COLOR RIBBON #1662733

133S \$7.95
For Model GSX-145 BLACK #1753204

134S COLOR \$15.95
For Model GSX-145 #1753215

FOR IBM

251S Black \$3.99
For Proprinter #1595686

252S Black \$4.99
For Proprinter XL #1611944

255S Black \$8.99
For IBM 2380/2390/2391/2381 #1723375

FOR PANASONIC

381S Black \$5.99
For Models 1000, 1080, 1081, 1082, 1083, 1090, 1091, 1092, 1180, 1191, 1592, 1593i #1595712

382S Black \$5.99
For Models 1123, 1124, 1124i #1595723

383S \$5.95
For Models 1624, 1695, #1647352

384S \$5.95
For Model KX-P1524 #1647374

385S \$6.95
For Model KX-P2180 BLACK #1753226

386S \$12.95
For Model KX-P2180 COLOR #1753237

FOR TOSHIBA

425S Black \$4.49
For Models P321, 341, 351SX #1611852

426S Black \$5.95
For Models P321SL, P341SL #1611863

FOR NEC

301S Black \$6.95
For Models P2200, P2200XE #1611830

302S Black \$6.25
For Models P5200, 5300 #1611841

FOR STAR

401S Black \$4.49
For Models NX1000 Series #1595734

402S Black \$7.49
For Model NX1020 #1662777

403 S COLOR \$11.95
For Model NX1020 #1662788

FOR SEIKOSHA

390S \$7.99
Black ribbon for models Seikosha SL-90/SL-92, SL-2400/PRIENTA 2400 #1723423



FOR IMAGEWRITER II

101S \$2.99
BLACK #1595240

102S \$7.99
COLOR #1662722

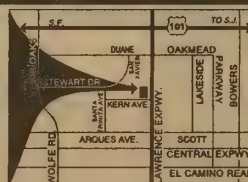
Combined With Fry's Low Prices, Parana Ribbons Are A Great Value!

Fry's ELECTRONICS
Home of Fast, Friendly, Courteous Service
Prices good through March 1, 1993
Limit Rights Reserved
Not Responsible For Typographical Errors

STORE HOURS:

MON-FRI 8AM-9PM
SATURDAY 9AM-8PM
SUNDAY 9AM-7PM

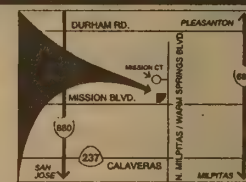
VISA MasterCard
VISA AND MASTERCARD ACCEPTED
CORPORATE P.O. FAX #



SUNNYVALE
1177 Kern Ave.
(408) 733-1770
(408) 735-6800



PALO ALTO
340 Portage Ave.
(415) 496-6000
(415) 496-6060



FREMONT
440 Mission Ct.
(510) 770-FRYS (3797)
(415) 770-3700

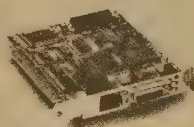
WESTERN DIGITAL

WESTERN DIGITAL 8 BIT ELETE ETHERNET CARD

WDLAN-EPRE ELETE
For PC/XT/AT INC NOVELL, UNIX,
AND TCP-IP DRIVERS
#162610

CERTIFIED
SMC
RESELLER

\$99⁹⁹

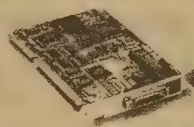


WESTERN DIGITAL 16 Bit ETHERNET CARD

10MB with 16K
RAM & ROM Slot
#1556401

CERTIFIED
SMC
RESELLER

\$139⁹⁹

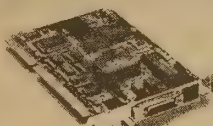


WESTERN DIGITAL ETHERNET CARD 16 BIT ELITE

FOR PC/XT/AT • INCLUDES DRIVERS FOR
NOVELL UNIX & TCP-IP
COAX/10 BASE T #1562891

CERTIFIED
SMC
RESELLER

\$189



WESTERN DIGITAL SMC ELETE 3512 T/P CONCENTRATOR 12 PORT

#1635726

CERTIFIED
SMC
RESELLER

\$799

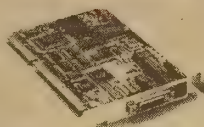
WESTERN DIGITAL 10 Bit ETHERNET CARD

WDLAN-ET16/10BASET 6PK

The EtherCard PLUS Elite is a 10-bit
high-performance 10Mbps local area
network (LAN) adapter that connects a
IBM PC, XT, AT non-Micro Channel PS/2,
or compatible computer to an Ethernet
network. This adapter provides you with
the best value in Ethernet LAN boards.
#1664492

6 PACK
CERTIFIED
SMC
RESELLER

\$699



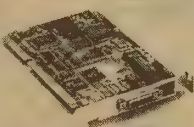
WESTERN DIGITAL 10 Bit ETHERNET CARD

FOR AT COAX
#1664540

CERTIFIED
SMC
RESELLER

6 PACK

\$799



MAX MACRONIX MAX MACRONIX MAX MACRONIX

MAXFAX 9624LT-T INTERNAL 9600 BAUD FAX 2400 BAUD MODEM FOR TOSHIBA LAPTOPS

FOR TOSHIBA T100SE/LE/X 1200XE, T2000SX and
T3100SX LAPTOP & NOTEBOOKS
9600 BAUD FAX/ 2400 BAUD MODEM
#1680575



\$199

2400 BAUD INTERNAL MODEM W/ 9600 SEND/RECEIVE FAX WITH MENU DRIVEN SOFTWARE

PC/XT/AT Internal • MaxFax 9624
Macronix 9600 Fax #1582875



\$99⁹⁹

MAXLITE/PC POCKET 14,400 BAUD FAX/MODEM

14,400 BPS Hayes-Compatible Modem
14,400 BPS Group III Compatible Fax
5 Year Limited Warranty • Phone & Serial Cable
AC Adapter • WinFax Lite™, MaxTalk™ and
Comit™ Software
#1695366



\$319

MAXLITE/MAC 9600 BAUD FAX 2400 BAUD MODEM

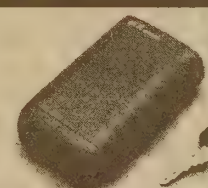
9600 Group III Fax
2400 MNP5 External Portable Modem
with Software #1599680



\$129

MAXLITE/PC 9600 BAUD FAX 2400 BAUD MODEM

9600 Group III Fax
2400 MNP5 External Portable
Modem with Software #1599679



\$129

MAXLITE/PC WINDOWS 9600 BAUD FAX 2400 BAUD MODEM

9600 Group III Fax 2400 MNP5 External Portable
Modem with Windows Drivers #1680586



\$129

Home of Fast, Friendly,
Courteous Service

FRY'S

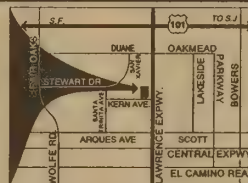
Prices good through
March 1, 1993

Limit Rights Reserved
Not Responsible For
Typographical Errors

STORE HOURS:
MON-FRI
8AM-9PM
SATURDAY
9AM-8PM
SUNDAY
9AM-7PM

VISA
MASTERCARD

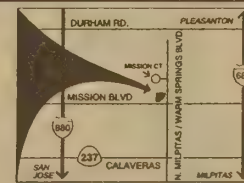
CORPORATE P.O. FAX #



SUNNYVALE
1177 Kern Ave.
(408) 733-1770
(408) 735-6800



PALO ALTO
340 Portage Ave.
(415) 496-6000
(415) 496-6060



FREMONT
440 Mission Ct.
(510) 770-FRYS (3797)
(510) 770-3700

E.S.P.

EXTENDED SERVICE PLAN

ON-SITE!*

Fry's now offers ON-SITE extended service plans to support the extended range of computing environments in today's workplace. Give our "Fry's on Wheels" support team the opportunity to solve your hardware problems. A \$999 system configuration would cost only \$225/year on a 2 year On-Site w/ Loaner Full-Service Plan.

Extend the Manufacturer's Warranty Through Fry's!

A LOANER FOR THE OWNER!

Fry's understands the inconvenience of downtime due to manufacturer repair delays. In keeping with our total commitment to service and customer satisfaction we offer our ESP customers loaner equipment for any repairs which exceed a 24 hour turn around and are covered under Fry's Depot or On-Site Service Plan.

ALL AT NO EXTRA CHARGE!

Computers never sleep and neither do our service departments.

7 DAYS A WEEK!

Fry's Service departments are open weekdays and weekends during regular store hours to provide you with complete Depot, On-Site and telephone technical support.

DEPOT: AT ANY OF FRY'S 3 SUPERSTORES

- A) No deductible or hidden charges.
- B) Renewable for the life of the product.
- C) No limit to the number of repairs
- D) Equipment repaired within 24 hours or loaner equipment will be provided.

Only \$75/year on a 2 year Loaner Plan for a system costing \$999

FACTORY CERTIFIED SERVICE TECHNICIANS



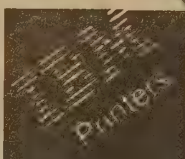
NOVELL NETWARE NETWORK INSTALLATION & SERVICE

24 HOUR QUICK RESPONSE TIME!

MOST CLONE COMPUTERS



Authorized
Personal
Computer
Dealer



LEXMARK
Authorized
Dealer



IF YOU DIDN'T BUY IT FROM FRY'S...

See us anyway!

We offer extended service protection on systems and printers purchased elsewhere. Bring your equipment into one of our three service departments and let Fry's courteous service technicians assist you in determining your computer service needs.*

* Subject to minimal evaluation & diagnostics fee to determine qualification for coverage.



Limit Rights Reserved
Not Responsible For
Typographical Errors

**HOLIDAY
HOURS:**
MON-FRI
8AM-10PM
SATURDAY
9AM-9PM
SUNDAY
9AM-8PM
VISA
MASTERCARD
CORPORATE P.O. FAX #



SUNNYVALE
1177 Kern Ave.
(408) 733-1770
(408) 735-6800



PALO ALTO
340 Portage Ave.
(415) 496-6000
(415) 496-6060

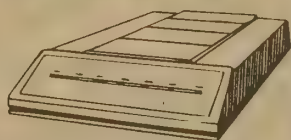


FREMONT
440 Mission Ct.
(510) 770-FRYS (3797)
(510) 770-3700

PRACTICAL PERIPHERALS®

**9600 FAX
9600 MODEM
MAC**

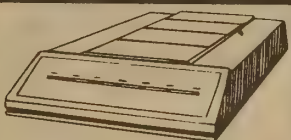
V.42 V.42 BIS MNP 1-5
QUICK LINK 11 MAC
#1757747



\$299

**9600 FAX
9600 MODEM**

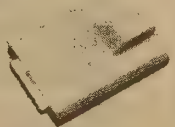
V.32 V.42 V.42 BIS
QUICK LINK 11
#1757770



\$269

**POCKET MAC
14,000 MODEM
14,400 FAX**

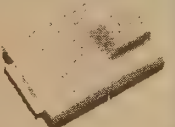
POCKET MODEM QUICK LINK
BATTERY PACK AND CASE
#1750441



\$399

**POCKET
14,000 MODEM
14,400 FAX**

POCKET MODEM QUICK LINK
BATTERY PACK AND CASE
#1750430



\$399

**MAC
14,000 MODEM
14,400 FAX**

V.42 V.42 BIS MNP 1-5
QUICK LINK 11 MAC
#1757758



\$329

**14,000 MODEM
14,400 FAX**

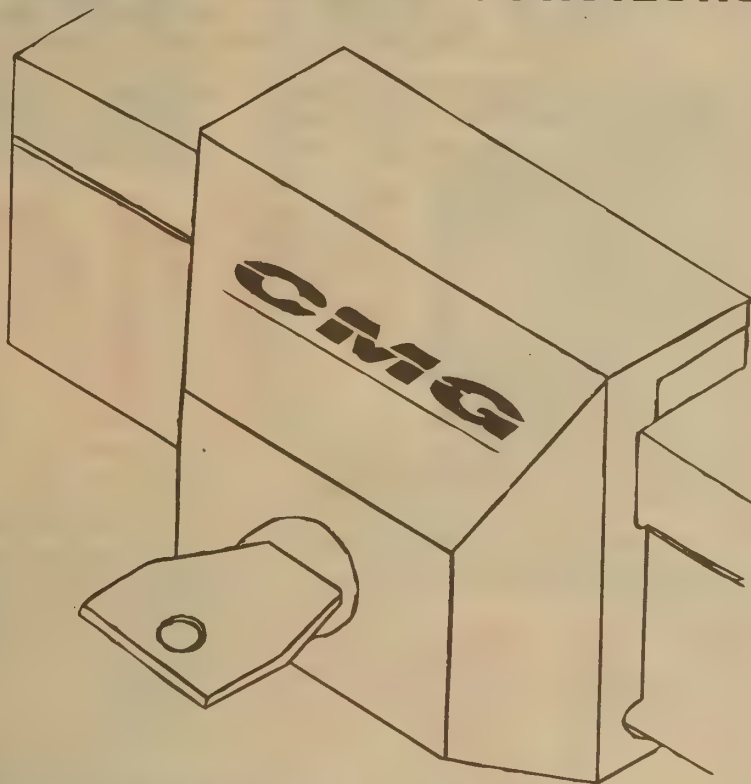
V.32 V.42 V.42 BIS MNP 1-5
QUICK LINK 11 MAC
#1757758



\$339

CMIG

PERFECT PORTABILITY PROTECTION!



TO STOP A THIEF

POWERLOCK™ FOR POWERBOOK

Powerlock™ combines physical and data security into one locking device. Access to the floppy drive, keyboard, and screen are prohibited. PowerLock™'s case hardened steel frame and wire anchor cable provide total protection without defacing or permanently attaching to the PowerBook. No glue, screws, or adhesives. PowerLock™'s slim design fits all PowerBook models.
#1741106

NOTELOCK™ FOR MOST NOTEBOOKS

NoteLock™ is a physical locking device for notebook computers that locks the computer shut, protecting the data. It also comes with a wire cable which allows you to secure the notebook to your desk so your computer cannot "walk off". Does not deface or permanently attach to the notebook. No glue, screws, or adhesives.
#1741117



\$44.99

YOUR CHOICE!

Fry's ELECTRONICS
Limit Rights Reserved
Not Responsible For
Typographical Errors

Home of Fast, Friendly,
Courteous Service

Prices good thru
March 1, 1993

VISA
AND
MasterCard
ACCEPTED

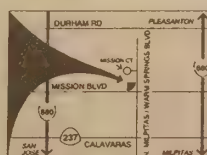


HOURS:
MON-FRI
8AM-9PM
SATURDAY
9AM-8PM
SUNDAY
9AM-7PM

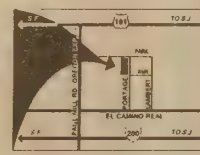
CORPORATE P.O. FAX #



SUNNYVALE
1177 Kern Ave.
(408) 733-1770
(408) 735-6800



FREMONT
440 Mission Ct.
(510) 770-FRYS (3797)
(510) 770-3700



PALO ALTO
340 Portage Ave.
(415) 496-6000
(415) 496-6060

SONY®

THE ONE AND ONLY.

3.5" DISKETTES

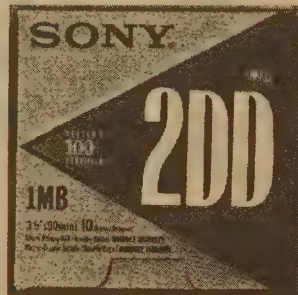
MFD-2HD 3.5" DS/HD



\$11.49

#121270

MFD-2DD 3.5" DS/DD



\$6.49

#121269

3.5" DS/HD
FORMATTED

\$12.45

#1551211

MFD-2HD



3.5" DS/DD
FORMATTED

\$8.29

#1551200

MFD-2DD



SONY DATA CARTRIDGES

QG112M 8mm Tape 2.3 Gigabyte
#1545599

\$13.95

QD600A 60MB.....
#1524581

\$18.95

QD6150 150MB.....
#1524640

\$19.99

QD2040 40MB.....
#1524628

\$13.99

QD300XLP 45MB.....
#1524592

\$17.99

DG60M 4mm Tape 1.3 Gigabyte
#1637430

\$14.49

DG90M 4mm Tape
#1637441

\$17.99

QD2080 80MB.....
#1650842

\$18.95

QD2120 120MB.....
#1650853

\$17.75

QD6250 250MB.....
#1650989

\$27.99

Fry's ELECTRONICS
Home of Fast, Friendly,
Courteous Service
Prices good through
March 1, 1993

Limit Rights Reserved
Not Responsible For
Typographical Errors

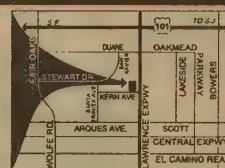
HOURS:
MON-FRI
8AM-9PM
SATURDAY
9AM-8PM
SUNDAY
9AM-7PM

VISA

MasterCard

VISA AND
MASTERCARD
ACCEPTED

CORPORATE P.O. FAX#



SUNNYVALE
1177 Kern Ave.
(408) 733-1770
(408) 735-6800



PALO ALTO
340 Portage Ave.
(415) 496-6000
(415) 496-6060



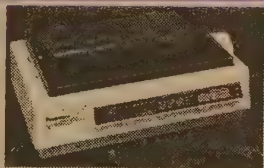
FREMONT
440 Mission Ct.
(510) 770-FRYS(3797)
(510) 770-3700

Panasonic PRINTER SALE!

An Authorized PANASONIC Reseller & Service Center

KX-P2123

24-PIN NARROW
CARRIAGE PRINTER

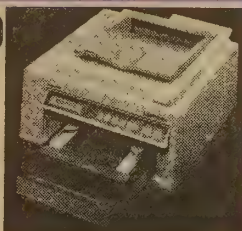


Quiet technology with Color Option.
240 Characters per second
360 Dots per inch • 10 fonts
Epson LX-860 and IBM ProPrinter Emulation
Top, Bottom and Rear Paper Feeds
#1668153

Adobe
TypeManager
Bundle IN
BOX

\$236⁹⁵

KX-P4430 LASER PRINTER

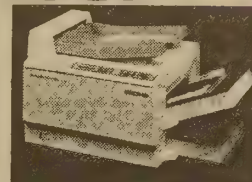


5 Pages Per Minute
300 DPI
1MB RAM Expandable to 5MB
PCL5 • Scalable Fonts

\$888

#1694181

KX-P4450i LASER PRINTER



Looking for a High Production Laser
Printer at a "personal" Laser price?
11 pages per minute • 250 sheet paper tray 512K Memory
Upgradeable to 2.5MB • 300 DPI resolution

\$1099

#1556098

KX-P2124

24 PIN
QUIET
DOT
MATRIX
PRINTER



320 CPS Draft • 85 CPS LQ • 8 Fonts
With Color Option • 12 Resident Fonts
360 X 360 Dots Per Inch

\$349⁹⁹

#1694170

KX-P4410 LASER PRINTER



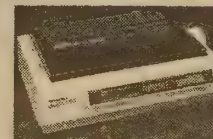
5PPM 300 DPI
512K RAM Expandable to 4.5MB
Bitmap Fonts • 200 Sheet Paper
Multi-purpose
Cassette

\$628

#1659047

KX-P2180

QUIET
PRINTER
TECHNOLOGY



9 Pin • 80 Columns • 192 CPS - 38 CPS NLQ
6 Built In NLQ Fonts • 240x 216 DPI Resolution
Push - Pull Tractor • Color Options

\$156⁹⁵

#1658714

KX-P4455 POSTSCRIPT LASER PRINTER



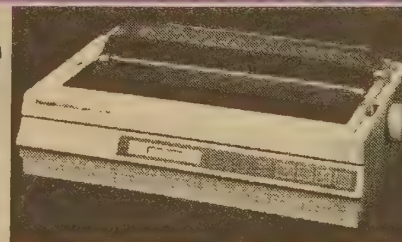
11 Pages Per Minute • 2MB RAM Expandable
to 4MB • Serial, Parallel & AppleTalk Interfaces
39 Adobe Postscript Fonts

\$1698

#1542910

KX-P2624

The Quiet 24-Pin
Wide carriage
Printer is Here!



Super Letter Quality Mode • 11 Resident
Fonts • 63 CPS in Near Letter Quality
mode • 132 Column • 240 CPS in Draft
Mode • Rear, Bottom, Front & Top Feed
Programmable EZ Set Operator Panel
Parallel Interface, Optional Serial

#1607936

\$378

Home of Fast, Friendly,
Courteous Service

FRY'S ELECTRONICS

Limit Rights Reserved
Not Responsible For
Typographical Errors

Prices good thru
March 1, 1993

VISA
AND
MasterCard
ACCEPTED



HOURS:
MON-FRI
8AM-9PM
SATURDAY
9AM-8PM
SUNDAY
9AM-7PM

CORPORATE P.O. FAX #



SUNNYVALE
1177 Kern Ave.
(408) 733-1770
(408) 735-6800



FREMONT
440 Mission Ct.
(510) 770-FRYS (3797)
(510) 770-3700



PALO ALTO
340 Portage Ave.
(415) 496-6000
(415) 496-6060

DYSAN™

SAVE THE THINGS THAT MATTER MOST™

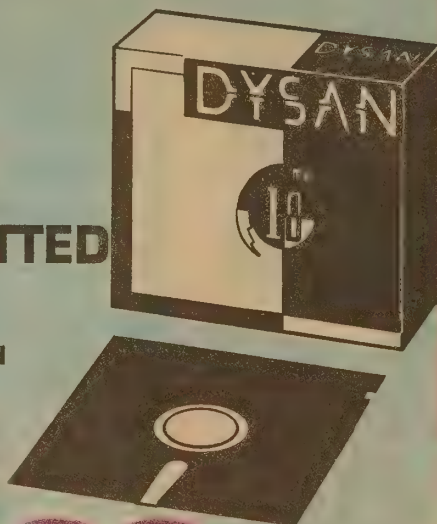
**BUY ANY TWO BOXES OF DYSAN
DISKETTES AND BUY A \$5⁰⁰
REBATE!!**

LIMIT 4 BOXES PER HOUSEHOLD

**5.25"
DS/DD
IBM FORMATTED
DISKETTES**

Plastic Disk Box Included
All Packaging Made
With Recycled Materials
Box Of Ten #1728978

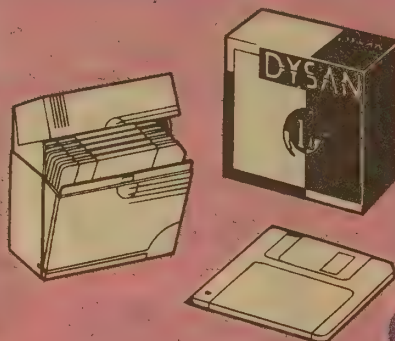
\$5⁹⁹



**3.5"
DS/DD
IBM
FORMATTED
DISKETTES**

Plastic Disk Box Included
All Packaging Made With Recycled Materials
Box Of Ten #1729027

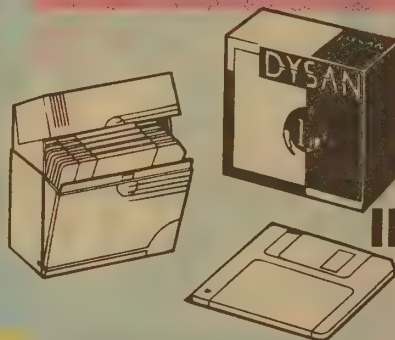
\$7⁹⁹



**3.5"
DS/HD
HI-DENSITY
IBM FORMATTED
DISKETTES**

Plastic Disk Box Included
All Packaging Made With Recycled Materials
Box Of Ten #1729049

\$9⁹⁹



**5.25"
DS/HD
HI-DENSITY
IBM FORMATTED
DISKETTES**

Plastic Disk Box Included
All Packaging Made
With Recycled Materials
Box Of Ten #1729005

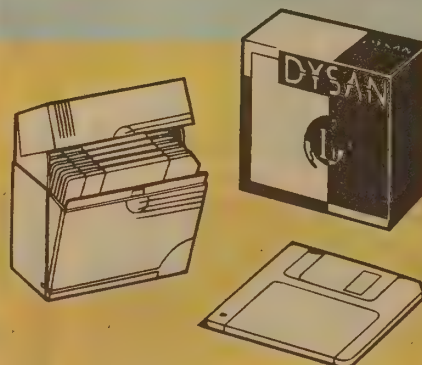
\$7⁹⁹



**3.5"
DS/HD
HI-DENSITY
MAC
FORMATTED
DISKETTES**

Plastic Disk Box Included
All Packaging Made With Recycled Materials
Box Of Ten #1729083

\$10⁴⁹



**Home of Fast, Friendly,
Courteous Service**

FRY'S ELECTRONICS

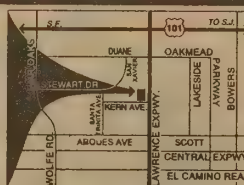
Prices good through
March 1, 1993

Limit Rights Reserved
Not Responsible For
Typographical Errors

HOURS:
MON-FRI
8AM-9PM
SATURDAY
9AM-8PM
SUNDAY
9AM-7PM

VISA AND
MASTERCARD

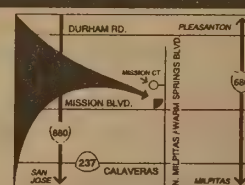
CORPORATE P.O. FAX #



SUNNYVALE
1177 Kern Ave.
(408) 733-1770
(408) 735-6800



PALO ALTO
340 Portage Ave.
(415) 496-6000
(415) 496-6060



FREMONT
440 Mission Ct.
(510) 770-FRYS (3797)
(510) 770-3700

WE'LL BEAT ANY IBM PRICE IN TOWN WE GUARANTEE IT!!!

Authorized
Personal
Computer
Dealer

IBM PS/1 EXPERT Intel 486™ SX-25MHz

AT BUS

129MB Hard Drive
4MB RAM Expandable
to 32MB
3.5" 1.44MB Diskette Drive
3 AT Slots and 3 Drive Bays
IBM 14" VGA
Color Monitor
IBM Mouse & Keyboard
2400 bps Internal Modem
• Novell® certified
• IBM Quality and
Reliability
The PS/1 Expert is built to
IBM's exacting standards for
quality and reliability.

VGA DISPLAY
INCLUDED!

All You Need In One Box!

• Preloaded Software

IBM DOS 5.0
Microsoft® Windows™ 3.1
MS Works for Windows
Tutorial, Index • PRODIGY®
Fitness • Virus check,
Promenade™
Address Book Plus®
• Support and Service
The exclusive online PS/1 Club™
answers your computing questions
20 hours a day, 365 days a year.

\$1599

MODEL 2133-S53 #1735820

IBM PS/1 EXPERT Intel 486™ SX-25MHz

AT BUS

170MB Hard Drive
4MB RAM Expandable to 32MB
3.5" 1.44MB Diskette Drive
5 AT Slots and 5 Drive Bays
IBM 14" .28 SVGA
Color Monitor
IBM Mouse & Keyboard
2400 bps Internal Modem
• Novell® certified
• IBM Quality and Reliability
The PS/1 Expert is built to IBM's
exacting standards for quality and
reliability.

UPGRADEABLE
W/OVERDRIVE
TO 486SX-40MHz
OPERATION!

VGA DISPLAY
INCLUDED!

All You Need In One Box!

• Preloaded Software

IBM DOS 5.0
Microsoft® Windows™ 3.1
MS Works for Windows
Tutorial, Index • PRODIGY®
Fitness • Virus check,
Promenade™
Address Book Plus®
• Support and Service
The exclusive online PS/1 Club™
answers your computing questions
20 hours a day, 365 days a year.

\$2099

MODEL 2155-S54 #1735831

IBM PS/1 EXPERT Intel 486™ DX-33MHz

AT BUS

211MB Hard Drive
8MB RAM Expandable to 32MB
3.5" 1.44MB Diskette Drive
5 AT Slots and 3 Drive Bays
IBM 14" SVGA
.28mm Color Monitor
IBM Mouse
IBM Selectric
Touch™ Keyboard
2400 bps Internal Modem
• Novell® certified
• IBM Quality and Reliability
The PS/1 Expert is built to IBM's
exacting standards for quality and
reliability.

VGA DISPLAY
INCLUDED!

All You Need In One Box!

• Preloaded Software

IBM DOS 5.0
Microsoft® Windows™ 3.1
Tutorial, Index
IBM PS/1 Index
IBM PS/1 Fitness with virus check,
Promenade™
Bonus Software: Address Book Plus®
• Support and Service
The exclusive online PS/1 Club™
answers your computing questions
20 hours a day, 365 days a year.

\$2499

MODEL 2155-S76 #1705418

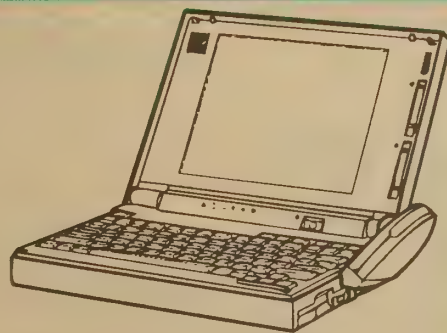
IBM PS/1 EXPERT Intel 386™ SL-25MHz NOTEBOOK AT BUS

80MB Hard Drive
2MB RAM Expandable
to 16MB
3.5" 1.44MB Diskette Drive
IBM Mouse & Keyboard
2400 bps Internal Fax / Modem
• IBM Quality and Reliability
The PS/1 Expert is built to IBM's exacting
standards for quality and reliability.

*IBM and Personal System/1
are registered trademarks of
International Business
Machines Corporation.

intel
inside

MODEL 2133-S13 #1709065



All You Need In One Box!

• Preloaded Software

IBM DOS 5.0 • Microsoft® Windows™ 3.1
MS Works for Windows
Tutorial, Index • PRODIGY® Fitness
Virus check, • Promenade™
Address Book Plus®
• Support and Service
The exclusive on-line PS/1 Club™ answers your
computing questions 20 hours a day, 365 days a
year.
#1709065

\$1999

Home of Fast, Friendly,
Courteous Service

HOURS:
MON-FRI
8AM-9PM
SATURDAY
9AM-8PM
SUNDAY
9AM-7PM

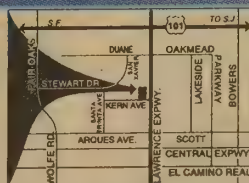
VISA

MasterCard

VISA AND
MASTERCARD

*IBM and Personal System/2 are
registered trademarks of International
Business Machines Corporation.
™Personal Computer AT and Proprinter
are trademarks of International Business
Machines Corporation.

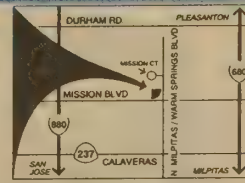
CORPORATE P.O. FAX #



SUNNYVALE
1177 Kern Ave.
(408) 733-1770
(408) 735-6800



PALO ALTO
340 Portage Ave.
(415) 496-6000
(415) 496-6060



FREMONT
440 Mission Ct.
(510) 770-FRYS (3797)
(510) 770-3700

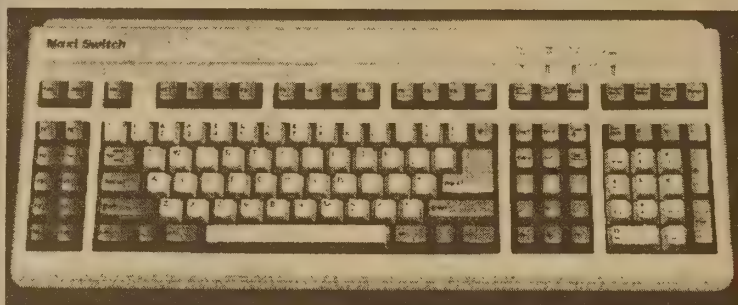
Prices good through
March 1, 1993

Limit Rights Reserved
Not Responsible For
Typographical Errors

WORLD PREMIER!

Maxi Switch Maxi Switch ProKEY 124

is more than just a keyboard...it is a personal productivity enhancement tool.



Unlike other keyboards, the ProKEY 124 is designed for today's menu driven systems and pays for itself by reducing multiple keystrokes into a single keystroke, which increases your data input rate.

FEATURE

Intelligent keyboard with built-in microprocessor and memory

Non-volatile memory

Macro function

Key Remap

Selectable repeat rate

BENEFIT

Single interface common to all applications, with no added demand on system memory or system CPU

Programmable features retained during system power-off

Playback a stored keystroke sequence with a single keystroke

Keys can be remapped to other locations

Repeat rates from 2 to 30 Characters Per Second

Macros Are Powerful Tools That:

- Can include up to 1800 characters per macro
- Can contain variable fields permitting input by the user
- Can be suspended with a single keystroke using a dedicated key
- Can contain delays
- Can be stored and loaded from disk via easy to use pop-up menus or through DOS command lines

Other Key Features:

- Windows compatible
- Autosensing for AT or PS/2 operation, no confusing switches to set
- Contains connectors for both IBM AT and PS/2 systems
- Contains 3.5 inch diskette with DOS and Windows utilities to download macros to/from disk

PC WORLD
TOP 20
UPGRADE

3 YEAR
WARRANTY!

\$9999



DATA/FAX MODEM DATA PORT™ 14.4/FAX All-in-one high-speed V.32bis fax modem

Delivers the highest performance, reliability, and compatibility in the industry. Tested, proven the leader in connecting calls, even on noisy, impaired lines.

Its exclusive AT&T optically-coupled phone line interface (pat. pending) enables the DataPort 14.4/Fax Modem to accurately isolate usable data, even on extremely weak phone lines. Plus, it features the same robust, award-winning technology designed by AT&T Bell Labs for large data centers—and fax capability, too!

The DataPort 14.4/Fax Modem delivers data at line speeds up to 14,400 bps. That's fast! But combined with its advanced, optically-coupled phone line interface and V.42bis data compression and error correction, you gain effective data throughput of up to 57,600 bps—nearly 24 times faster than 2,400 bps modems—on "real world" phone lines! This high performance significantly saves long distance costs.

The DataPort 14.4/Fax Modem expands your personal computer into a fax workstation. You can send and receive faxes without ever waiting in line; and send presentation-quality faxes!

For PC-compatibles, PS/2, or Macintosh.
Package Includes: 14.4/Fax Modem, user's manual, phone cord; lifetime warranty, technical support, FREE fax and modem software, and FREE CompuServe® bonus.

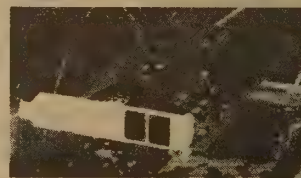
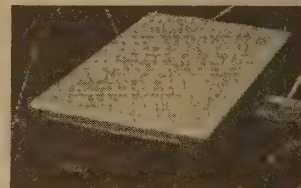
CCITT V.32bis, V.32, V.23, V.22bis, V.22, V.21; Bell 212A, Bell 103J
FAX V.29, V.27ter (Group 3); PC FAX
EIA/TIA-578 (Class 1) compatible
Line Data Rates: 14,400 bps to 300 bps
Line Fax Rates: 9,600 bps to 2,400 bps
Data Compression: CCITT V.42bis or MNP 5
Error Correction: CCITT V.42 or MNP 4-2
Command Set: HAYES AT
Size: 6.0 in (15.0 cm) W, 1.25 in (3.0 cm) H,
8.75 in (22.0 cm) D
Weight: 1.3 lbs (.59 Kg)
Power: 5.37 watts
Approvals: FCC Part 15, Class B; FCC Part
68, AW2USA-73706-FA-E; Listed UL 1950;
CSA Safety Cert. CSA 22.2, No. 950.

EXTERNAL DATA/FAX MODEM DATA PORT™ 14.4/FAX

#1751419

INTERNAL DATA/FAX MODEM DATA PORT™ 14.4/FAX

#1751420



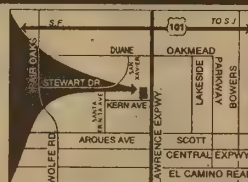
Fry's ELECTRONICS
Prices good through
March 1, 1993

Limit Rights Reserved
Not Responsible For
Typographical Errors

STORE HOURS:
MON-FRI
8AM-9PM
SATURDAY
9AM-8PM
SUNDAY
9AM-7PM

VISA
MASTERCARD

CORPORATE P.O. FAX #



SUNNYVALE
1177 Kern Ave.
(408) 733-1770
(408) 735-6800



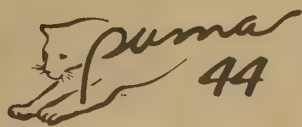
PALO ALTO
340 Portage Ave.
(415) 496-6000
(415) 496-6060



FREMONT
440 Mission Ct.
(510) 770-FRYS (3797)
(510) 770-3700

SyDOS

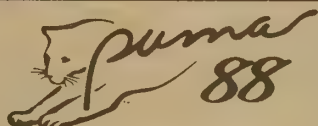
44MB PARALLEL REMOVABLE EXTERNAL DISK DRIVE



With integrated parallel adapter.
Runs off parallel port. Runs with
any IBM compatible. Uses 44MB
Syquest cartridges
#1716696 SYDOS PUMA

\$399⁹⁵

88MB PARALLEL REMOVABLE EXTERNAL DISK DRIVE



With integrated parallel adapter.
Runs off parallel port. Runs with
any IBM compatible. Uses 88MB
Syquest cartridges
#1716700
SYDOS PUMA

\$399⁹⁵

SCSI 8 BIT 88 REMOVABLE DISK DRIVE INTERNAL



Software included
#1742299
SYDOS PUMA

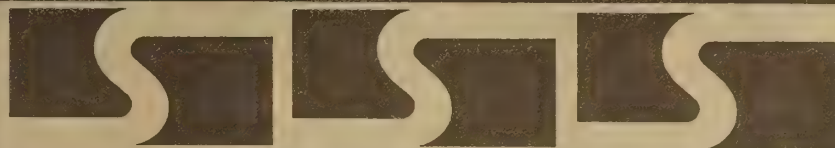
\$759

SCSI 16 BIT 88 REMOVABLE DISK DRIVE EXTERNAL



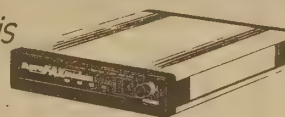
ASYNCR 10MB PER SEC.
#1742303
SYDOS PUMA

\$799



Supra Corporation® Supra Corporation® Supra Corporation®

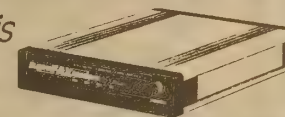
SupraFAX Modem™ V.32bis



MAC 14,400 BAUD MODEM
WITH V.42BIS
14,400 FAX
50-14FX-MC
#1722204

\$349

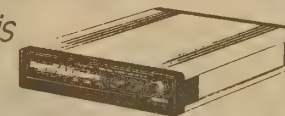
SupraFAX Modem™ V.32bis



14,400 BPS FAX MODEM
WITH V.42BIS
MNP 2-5
50-14FX-O
#1705625

\$329

SupraFAX Modem™ V.32bis



IBM DOS
14,400 BAUD MODEM
WITH V.42BIS
9600 BAUD FAX FOR IBM
DOS APPLICATION
#1722215

\$349

SupraFAX Modem™ 24/96



2400 MODEM
96 SEND 48 RECEIVE
MNP 2-7 SOFTWARE
V.42 BIS
#1735716

\$54⁹⁹

SupraFAX Modem™



14,400 SEND/RECEIVE FAX
AND MODEM
MNP 2-5 HARDWARE V.42BIS
INTERNAL #1735727

\$249

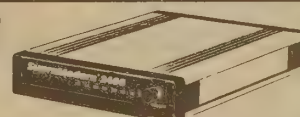
SupraFAX Modem™



14,400 SEND/RECEIVE FAX WINDOW
AND MODEM
MNP 2-5 HARDWARE V.42BIS
INTERNAL 50-14FX WINDOW
#1746031

\$269

SupraModem® 2400



EXTERNAL MODEM
2400 BAUD FOR DOS OR
MACINTOSH
50-2400-O
#1751752

\$69⁹⁹

Home of Fast, Friendly,
Courteous Service

FRY'S ELECTRONICS

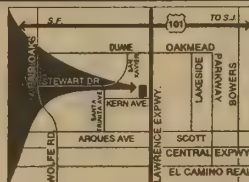
Prices good through
March 1, 1993

Limit Rights Reserved
Not Responsible For
Typographical Errors

HOURS:
MON-FRI
8AM-9PM
SATURDAY
9AM-8PM
SUNDAY
9AM-7PM

VISA
MasterCard
VISA AND
MASTERCARD

CORPORATE P.O. FAX #



SUNNYVALE
1177 Kern Ave.
(408) 733-1770
(408) 735-6800



PALO ALTO
340 Portage Ave.
(415) 496-6000
(415) 496-6060

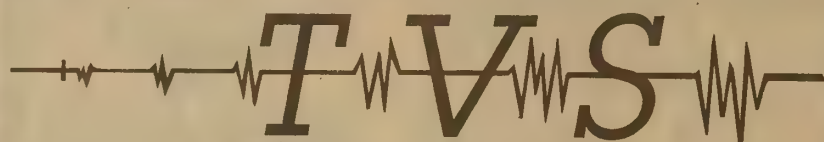


FREMONT
440 Mission Ct.
(510) 770-FRYS (3797)
(510) 770-3700

AVOID SYSTEM MELTDOWN!



Brooks Power Systems, Inc.



Transient Voltage Surge
They can destroy your machine or
cause intermittent errors.
**PROTECT YOURSELF,
YOUR INVESTMENT AND
YOUR PRECIOUS TIME!**



**UNCONDITIONAL
LIFETIME
WARRANTY!**

**FIREPROOF
ALUMINUM
CASING!**

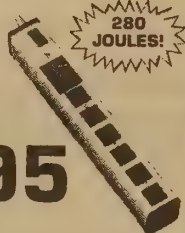
SURGE STOPPER

6 OUTLET VCN SURGE PROTECTOR

- 5 Component • 3 Line Surge and Noise Filter
- 280 Joules • 15 AMPS
- Response Time <5 picoseconds
- \$10,000 Equipment Replacement Guarantee

#1756344

\$44⁹⁵



**280
JOULES!**

6 OUTLET HD SURGE PROTECTOR

- 10 Component • 3 Line Surge and Noise Filter
- 500 Joules • 15 AMPS
- Response Time <1 picosecond
- \$1,000,000 Equipment Replacement Guarantee
- Fail Safe Suppression Circuit

#1756355

\$59⁹⁵



**500
JOULES!**

6 OUTLET BN SURGE PROTECTOR

- Six Stage • 15 Component • 3 Line Surge and Noise Filter
- 750 Joules • 15 AMPS
- Response Time <1 picosecond
- \$2,000,000 Equipment Replacement Guarantee
- Fail Safe Suppression Circuit

#1756366

\$79⁹⁹



**750
JOULES!**

VOICE MAIL, AUTOATTENDANT AND CALL PROCESSOR



**FULL
BACKGROUND
OPERATION**



VOICE MAIL

- Set up to 10,000 Voice Mail Boxes
- Mail Boxes are password protected
- Mail Boxes may be accessed:
From Main menu, routed by
Greetings or by dialing one string
of numbers
- Mail Boxes may store any number
of Messages
- Record, Listen, Erase, Browse thru
Messages
- Forward messages from Mail
Boxes to another phone
-After checking Password of the
answering party
-As soon as the forwarded to person answers or
-To an answering machine
- Schedule time of forwarding; set daily routines
- Prerecorded Greetings route Callers to all functions
- Transfer/Copy of Messages between Mail Boxes
- Distribute messages to a list of Mail Boxes

AUTOATTENDANT

- Automatic or Operator Answering of Phone Calls
- Transfer Calls to PBX Extensions
- Operator may bypass Greetings and transfer Caller to any desired Function
- Caller may bypass Greetings and access any function by dialing a set of numbers
- Broadcast a Prerecorded Information or Music file while Caller is put on hold
- Caller may access Operator at all times
- Caller may access in One step any function from anywhere in the system
- Record calls and playback them
- Ring Mail Box owner's Extension after receipt of message in the Mail Box

CALL PROCESSOR

- A 3 Stage decision tree may be customized to selectively access Mail Boxes
- Predictive Dialing from the Phone book; Reached Parties are put on hold and
their names displayed on the screen
- Filtering of calls registered in the log book by date, name, phone number,
Mail Box number, duration and status of the call
- Distribution Analysis of calls after filtration

#1746950

Multi-ComBoard

VOICE MAIL, AUTOATTENDANT & CALL PROCESSOR

**PROFESSIONAL
BUSINESS
PRODUCT!**

\$239

**Multi-ComBoard™
SPEAKING DEVICES**

**Home of Fast, Friendly,
Courteous Service**

fry's ELECTRONICS

Prices good through
March 1, 1993

Limit Rights Reserved
Not Responsible For
Typographical Errors

HOURS:
MON-FRI
8AM-9PM
SATURDAY
9AM-8PM
SUNDAY
9AM-7PM

**VISA AND
MASTERCARD**

CORPORATE P.O. FAX #



SUNNYVALE
1177 Kern Ave.
(408) 733-1770
(408) 735-6800



PALO ALTO
340 Portage Ave.
(415) 496-6000
(415) 496-6060



FREMONT
440 Mission Ct.
(510) 770-FRYS (3797)
(510) 770-3700

SUPER SOFTWARE DEALS AT FRY'S

TurboTax
1992 FEDERAL 1040
HEADSTART EDITION
Discover the New
EasyStep System.

Introducing EasyStep... a revolutionary new tax preparation system that leads you through your tax return from start to finish... guides you every step of the way... and completes the return for you automatically. More than just an interview or tutorial, EasyStep is a whole new way to do your taxes. And only TurboTax has it.

\$41.95 IBM #138808
CHIPSOFT, Inc.

Andrew Tobias' TAX CUT DOS

The only expert system for managing your taxes! Tax Cut lets you prepare an IRS-approved, expert-quality tax return right on your PC, even if you are a tax or computer novice. This tax season, let your computer do the work.

\$44.95 meca® IBM #1432905

Microsoft Video for Windows

Microsoft Video for Windows opens your videos to a world of digital possibilities on your PC. Capture and incorporate video into presentations, include it in PC-based tutorials, or distribute it on CD-ROM. You can even get started right away—without a camcorder—by using the Video Clip Library of more than 200 video samples.

\$134.95 IBM #1748413

STAR TREK THE SCREEN SAVER FOR WINDOWS

Star Trek is a screen saver that also features authentic AudioClips from Sound Source Unlimited - The actual sound effects, music and dialog from the original series. Some features include: Over 15 Star Trek graphic displays • Runs all After Dark displays Screen-locking security system Digital Sound without any hardware

\$35.95 IBM #1742602
BERKELEY SYSTEMS

WordPerfect 5.2 for Windows

THE BEST IN WINDOWS WORD PROCESSING!

WordPerfect for Windows takes full advantage of the Windows graphical abilities, giving you all the benefits of the world's leading word processor in a program that's simple, powerful and fun to use. It comes with button bars that can be created and customized. It's tables, equations, lists and columns are greater than ever and now comes with DDE. It is compatible with 5.1 DOS.

\$259 IBM #1748745
WordPerfect CORPORATION

Microsoft CINEMANIA

Explore the magic behind the movies! From contemporary to classic films, Cinemania is the fast, fun, personal guide that lets you see and hear it all - the reviews and biographies, the faces and voices, the inside stories. For every movie lover, Cinemania is an incredible new view of the movies.

\$59.95 IBM #1747489

BORLAND C++ 3.1 FOR WINDOWS AND DOS

Borland C++ is the professional development system with full support of ANSI C and C++2.1 (with templates). It includes a powerful global optimizer, with enhanced performance, a Window-hosted development environments and powerful visual programming tools. ObjectBrowser lets you graphically see relationships in your code; EasyWin converts DOS applications to Windows just by recompiling, and Resource Workshop lets you create great Windows resource visually. For C and C++ programming in Windows or DOS.

\$349 IBM #1708927
BORLAND

OFFICE ACCELERATOR

Office Accelerator is the new standard for quickly and easily generating letters, labels, envelopes, forms, faxes, reports, and mass mailings. It works with MS Word for Windows, WordPerfect for Windows, and AmiPro for Windows.

\$54.95 IBM #1756573

Microsoft Visual Basic 2.0 for Windows

Microsoft Visual Basic Programming system for Windows allows you to create rich graphical applications. The seamless integration of the powerful programming language with visual design tools provides the easiest, most economical route to creating true Windows applications.

\$134.95 IBM #1746673

STACKER
DOUBLES HARD DISK CAPACITY
for Windows and DOS 3.0

Stacker for Windows & DOS, from Stac Electronics, is award winning hardware software that instantly and safely doubles your data without losing any information. Stacker works on all Window & DOS-based computers, and is ideal for laptops and notebooks as well as desktop systems.

\$109.95 IBM #1741173

WHERE IN THE WORLD IS CARMEN SAN DIEGO? CD-ROM

This award winning software is now available in CD-ROM. It turns geography into an exciting world wide chase. It includes 32,001 clues about world geography, history & culture, The World Almanac & Book of facts, to help decipher clues and has five levels of difficulty.

\$79.95 CD-ROM #1670907
Broderbund

F-15 STRIKE EAGLE III

With F-15 Strike Eagle III you will experience a revolutionary new visual system! Incredible new photo-realistic starting and ending screens. Amazing two player capabilities! Modern high-tech opponents are ruthless as is faced by real F-15 pilots. It requires 386 or 486 with 2MB RAM, hard disk and VGA graphics. Supports all major sound cards.

\$48.95 IBM #1736441
MICRO PROSE

Home of Fast, Friendly, Courteous Service

FRY'S ELECTRONICS

Prices good through March 1, 1993

HOURS:
MON-FRI
8AM-9PM
SATURDAY
9AM-8PM
SUNDAY
9AM-7PM

CORPORATE P.O. FAX #



SUNNYVALE
1177 Kern Ave.
(408) 733-1770
(408) 735-6800

FREMONT
440 Mission Ct.
(510) 770-FRYS (3797)
(510) 770-3700

PALO ALTO
340 Portage Ave.
(415) 496-6000
(415) 496-6060



AT&T THE RIGHT CHOICE!!!



AT&T

VIDEOPHONE 2500

AT&T'S revolutionary videophone is here! Using your existing phone line you can place calls to another videophone and the cost of the call will be the same as a conventional phone call! Features include: Speakerphone, 12 Number Memory, Full Color, Motion Video using an LCD Screen, a Swivel Camera (For scanning your room), Brightness and focus adjustments, and a lightweight portable design. Own the future today for only...

\$998

Model
2500
#1739385

PRICE

BREAK



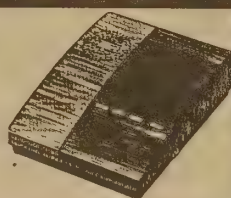
ANSWERING MACHINE

WITH BEEPERLESS REMOTE

From the Number One maker of telephone products comes this answering machine. It has beeperless remote control, voice activation, ring select and much more!

\$3995

model
1306
#1569315



TWO LINE SPEAKERPHONE

AT&T delivers with this feature packed two-line speakerphone. The distinctive ringing feature will help distinguish which line is ringing, and 3-party conferencing allows you to bring calls from 2 phone lines together for 3-way conversations. An excellent value at...

\$6995

model
722
#1548433

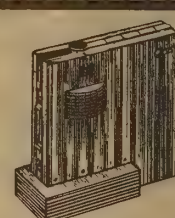


DIGITAL ANSWERING MACHINE

Now you can join the digital revolution with AT&T's totally digital answering machine! This unit has no moving parts! It has a digital message counter, beeperless remote, super digital sound quality and time/day stamp!

\$9995

model
1339
#1708983



10 CHANNEL CORDLESS PHONE

w/RETRACTABLE FLEXIBLE ANTENNA

Leave it to AT&T to design a cordless phone with the customers needs in mind, for example a retractable antenna, 10 channel autoselect, receiver volume control on the handset, handset locator, lighted dial and even a directory card on the handset. Now only...

\$11995

model
5405
#1708994



10 CHANNEL SPEAKERPHONE

w/RETRACTABLE FLEXIBLE ANTENNA

AT&T's innovative cordless speakerphone offers a retractable antenna, receiver volume control on the handset, 2-way page and intercom, handset locator, and clarity plus circuitry with 10 channel autoselect. for only...

\$16995

model
5515
#1738694



10 CHANNEL CORDLESS

w/ANSWERING SYSTEM

You will be amazed at clarity of this AT&T cordless phone! By incorporating clarity plus circuitry with AT&T Bell Lab 5 design, the result is corded sound quality that virtually eliminates static! Now only...

\$199

model
5600
#1605510



Home of Fast, Friendly, Courteous Service

FRY'S ELECTRONICS

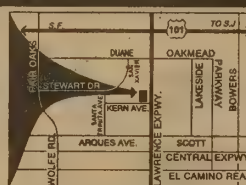
Prices good through March 3, 1993

Limit Rights Reserved
Not Responsible For
Typographical Errors

HOURS:
MON-FRI
8AM-9PM
SATURDAY
9AM-8PM
SUNDAY
9AM-7PM

VISA AND
MASTERCARD

CORPORATE P.O. FAX #



SUNNYVALE
1177 Kern Ave.
(408) 733-1770
(408) 735-6800



PALO ALTO
340 Portage Ave.
(415) 496-6000
(415) 496-6060



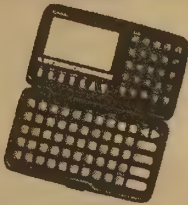
FREMONT
440 Mission Ct.
(510) 770-FRYS (3797)
(510) 770-3700

GET ORGANIZED!

AT FRY'S ELECTRONICS

CASIO DIGITAL DIARIES SHARP DIGITAL DIARIES PALMTOP COMPUTERS

CASIO DIGITAL DIARY



Why carry around a calendar & schedule book, telephone directory and notebook, when you can do it all and more with this new digital diary from Casio. Optional PC and Mac links also available.

\$59⁹⁵

Model
SF-4300
#1647189

SHARP PERSONAL ORGANIZER



This Personal Organizer from Sharp will get you organized for less, much less. This unit boasts three telephone directories, personal scheduler, memo pad and calendar. This unit also has an option port that allows you to talk to other sharp a Personal Organizers. All this for the hot low price of...

\$99⁹⁵

Model
ZQ-2400
#1604715

hp HEWLETT
PACKARD
Authorized Dealer

HP-95LX 512K

PALMTOP COMPUTER



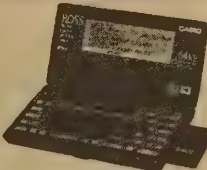
This amazing palm top computer has Lotus 1-2-3, Word Processor, Data Base, Appointment Scheduler and 512KMB memory. Truly an incredible product, supply is limited. Get yours now for only...

\$397

Model
HP95LX-512K
#1584442

CASIO

B.O.S.S. 64K WIDE SCREEN BUSINESS ORGANIZER



This unbelievable value comes equipped with 64KB of memory (W/additional memory available), a telephone directory, business card library, calendar, schedule planner, schedule alarm, clock w/world time capability, all displayed on a 6 line by 32 character screen! The best value you will find this New Year at only...

\$119⁹⁵

Model
SF-9500
#1531167

SHARP 128K WIZARD DIGITAL DIARY



This amazing Personal Organizer will put a world of information at your fingertips! The Wizard comes equipped with a calendar, appointment book, memo pad, and a 128K character memory to store it all. It can interface with your Macintosh or IBM computer and offers a wide variety of software to choose from!

\$279

Model
OZ-8200
#1548433

hp HEWLETT
PACKARD
Authorized Dealer

HP-95LX 1MB

PALMTOP COMPUTER



This amazing palm top computer has Lotus 1-2-3, Word Processor, Data Base, Appointment Scheduler and 1MB memory. Truly an incredible product, supply is limited. Get yours now for only...

\$597

Model
HP95LX-1MB
#1675544

CASIO 256K EXECUTIVE B.O.S.S. w/BUILT-IN SPREADSHEET



Casio's latest business organizer comes equipped with a business card management function, schedule function, two month calendar display, world time, a daily alarm, schedule alarm, telephone directory, memo functions, reminder function, to do list, cut & paste function, and spreadsheet function (compatible with Lotus 1-2-3 data), all displayed on a wide 40 character by 10 line screen. An invaluable investment at only...

\$298

Model
SF-R20
#1728473

SHARP 256K PERSONAL ORGANIZER w/TOUCH SCREEN TECHNOLOGY



This Sharp Wizard lets you leave your portable computer at home but puts the power of that computer in your pocket! Here's a small sampling of the innovative features. Touch screen technology which allows you to write or draw on the screen using the Wizard pen, filer which organizes related data into folders that can be transferred to another touch screen Wizard Via infrared, and it's true word processor with a large screen display and a keyboard that's 75% the size of a standard PC keyboard. The possibilities are endless at only...

\$498

Model
OZ-9600
#1741782

ACE MEMORY CARDS FOR HP-95LX

1MB DOUBLE CARD **\$169**
2MB DOUBLE CARD **\$299**
4MB DOUBLE CARD **\$469**

LIFETIME WARRANTY

Home of Fast, Friendly,
Courteous Service

FRY'S ELECTRONICS

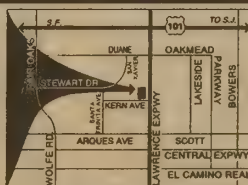
Prices good through
March 3, 1993

Limit Rights Reserved
Not Responsible For
Typographical Errors

HOURS:
MON-FRI
8AM-9PM
SATURDAY
9AM-8PM
SUNDAY
9AM-7PM

VISA
MASTERCARD
VISA AND
MASTERCARD

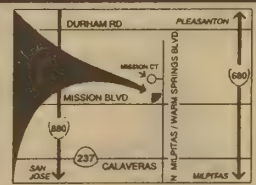
CORPORATE P.O. FAX #



SUNNYVALE
1177 Kern Ave.
(408) 733-1770
(408) 735-6800



PALO ALTO
340 Portage Ave.
(415) 496-6000
(415) 496-6060



FREMONT
440 Mission Ct.
(510) 770-FRYS (3797)
(510) 770-3700

YOUR BEST COMPONENT AND ACCESSORY BUYS ARE ALWAYS AT FRY'S

MEMORY UPGRADES/SIMM MODULES FOR MAC

1 MEG X 8-80NS	#1493568	\$29 ⁹⁹
1 MEG X 8-80NS FX	#1515785	\$39 ⁹⁹
2 MEG X 8-80NS	#1722282	\$76 ⁹⁹
4 MEG X 8-80NS	#1722411	\$119 ⁹⁹
4 MEG X 8-80NS FX	#1722455	\$149 ⁹⁹

FOR IBM COMPATIBLES

1 MEG X 9-80NS (3 CHIP)	#1722329	\$31 ⁹⁹
1 MEG X 9-80NS	#1436367	\$32 ⁹⁹
4 MEG X 9-80NS	#1722444	\$127 ⁹⁹

FOR MICRO CHANNEL

512K X 36-80NS	#1472745	\$88 ⁸⁸
1 MEG X 36-80NS (4MEG)	#1754102	\$164 ⁹⁹
2 MEG X 36-80NS (8MEG)	#1754124	\$329 ⁹⁹
4 MEG X 36-80NS (16MEG)	#1754157	\$659 ⁹⁹

MATH COPROCESSORS

intel FOR i387 w/ A FREE LOTUS ORGANIZER

DX/33MHz	#1747973	\$88 ⁸⁸
SX	#1747951	\$98 ⁹⁹
SL	#1747962	\$98 ⁹⁹

IIT FOR 3C87

3C87-25MHz	#1504080	\$84 ⁹⁹
3C87-33MHz	#1504138	\$84 ⁹⁹
3C87-40MHz	#1612060	\$99 ⁹⁹

Cyrix

83D87-16MHz	#1654581	\$79 ⁹⁹
83D87-20MHz	#1654592	\$79 ⁹⁹
83D87-25MHz	#1654606	\$79 ⁹⁹
83D87-33MHz	#1654617	\$79 ⁹⁹
83D87-40MHz	#1654628	\$89 ⁹⁹

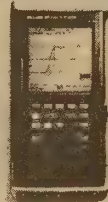
WEITEK - FLOATING POINT COPROCESSORS

3167-33MHz	#1673519	\$199 ⁹⁹
4167-25MHz	#1673531	\$329 ⁹⁹
4167-33MHz	#1673542	\$649 ⁹⁹

FRY'S IS YOUR TEST AND MEASUREMENT HEADQUARTERS

FLUKE 97 VERSION 4 SCOPEMETER™

Hand-held instrument that teams a 50MHz 25 mega-samples per second, dual channel digital storage oscilloscope with a feature-packed 3000-count digital multimeter. All in a rugged, sealed industrial package with battery operation that you can take anywhere you go.



\$1950

#1747478

FLUKE 87 4 1/2 DIGIT TRUE RMS DIGITAL MULTIMETER

19,999 Count high resolution mode, plus 1ms Peak Min/Max Hold.
• Min/Max/Average recording mode w/Min/Max alert
• Frequency, Duty Cycle, & Cap Measurements
• Back-lit display, touch hold, relative modes
• Protective Holster with Flex stand
• Made in USA, 3 Year Warranty



\$298⁹⁹

#1440238

FLUKE 77 SERIES II ANALOG DIGITAL MULTIMETER

The high resolution 3200 count digital display delivers better accuracy than conventional 3.5 digit DMMs. A 31 segment bar graph reacts 10 times faster than the numerical display, making peaking and dipping adjustments easy. Touch hold. Sleep mode. Three year warranty.

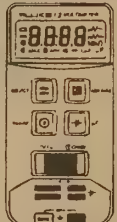


\$164⁹⁹

#1567483

FLUKE 12 HANDHELD DIGITAL MULTIMETER

Min Max recording with relative time stamp
Capacitance: .001 to 9999uF
V Check™ • Continuity Capture™
4000 count digital display
0.9% basic dc volts accuracy
1.9% basic ac volts accuracy
0.9% basic ohms accuracy
Fast continuity beeper • Diode Test • Sleep mode
Two year warranty



\$89⁹⁵

#1636059

HITACHI NEW FRANCHISE

Hitachi Denshi has a strong record of producing quality measurement instruments such as oscilloscopes which have consistently made significant contributions to the test and measurement industry. Their unsurpassed reliability and excellent value have won the respect of both users and peers.

HITACHI



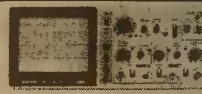
20MHz OSCILLOSCOPE

This light weight, slim-line scope has become the standard of high performance. Hitachi scopes have earned acclaim from field-serving and maintenance personnel worldwide.
2 Channel, Single Time Base
1mV/DIV • 3 Year Warranty

Model V-212
#1746237

\$419

HITACHI



50MHz OSCILLOSCOPE

With Single Time Base & High Resolution CRT. The usefulness of Hitachi scopes is extended to cover an array of new measurement applications.
2 channel • 6 inch screen • 1mV/DIV
3 Year Warranty.

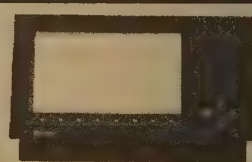
V-522
#1746248

\$995

HITACHI

100MHz LOGIC ANALYZER

32 Data Channels • 5ns Glitch Capture
Multi-Level Triggering • 8K Memory/Channel
The VC-3120 Logic Analyzer provides 25MHz analysis on up to 32 channels. With Soft-Key menus & on-line instructions.
This logic analyzer is easy-to-use yet powerful enough for advanced digital design & microprocessor system debugging



V-3120 #1746352.

\$1995

Home of Fast, Friendly,
Courteous Service

FRY'S ELECTRONICS

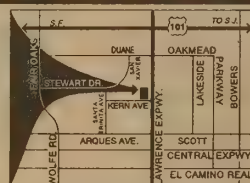
Prices good through
March 3, 1993

Limit Rights Reserved
Not Responsible For
Typographical Errors

HOURS:
MON-FRI
8AM-9PM
SATURDAY
9AM-8PM
SUNDAY
9AM-7PM

VISA AND
MASTERCARD

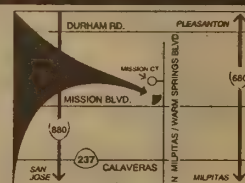
CORPORATE P.O. FAX #



SUNNYVALE
1177 Kern Ave.
(408) 733-1770
(408) 735-6800



PALO ALTO
340 Portage Ave.
(415) 496-6000
(415) 496-6060



FREMONT
440 Mission Ct.
(510) 770-FRYS (3797)
(510) 770-3700

FRY'S ELECTRONICS IS YOUR ELECTRONIC TOOL HEADQUARTERS

TOOL CASES

& Chicago Case Co.

DESIGNED TO SATISFY THE VARIED NEEDS OF PROFESSIONAL TECHNICIANS AND EXECUTIVES

CD1 - SMALL CORDURA ZIPPER CASE
HOLDS 18 TOOLS AND A TEST METER **\$27⁹⁹**
#1567852

CD29 - TROUBLE SHOOTER ZIPPER CASE
HOLDS 29 TOOLS AND A TEST METER **\$51⁹⁹**
13" X 10" X 2 1/2"
#1567863

CDZVLAP - LIGHTWEIGHT SOFT SIDED
LAPTOP COPUTER CARRYING CASES **\$49⁹⁵**
16 1/2" X 13" X 3 1/2"
#1567896

6000 - RUGGED ABS SHELL 2 PALLET
TOOL CASE. STURDY ALLUMINUM
FRAME, LINED INTERIOR 18" X 13" X 6" **\$89⁹⁹**
#1567911

3X150BR - REVERSIBLE PALLET
TOOL CASE **\$109⁹⁵**
#1567922 REG. \$125.99 *WHILE THEY LAST!*

SOLDERING STATIONS

HAKKO THE LEADING PRODUCER OF SOLDERING EQUIPMENT

926MM-V12 - THE BUILT-IN CERAMIC HEATER
SENSOR MAINTAINS TEMPERATURE WITH
0.5° C (0.9°) OF THE SETTING **\$134⁹⁹**
#1538898

920M-V12 - PRE-SET 580° F TEMPERATURE
CONTROL SOLDERING IRON **\$46⁹⁵**
#1541469

N454JN-V12 - 25 WATT SOLDERING
IRON 450° C / 842° F **\$27⁹⁹**
#1556308

Weller® WORLD'S LEADING QUALITY SOLDERING EQUIPMENT
EC20021 - ESD/COMPLETE SOLDERING STATION **\$265⁹⁵**
#1700103

WCC100 - ELECTRONICALLY CONTROLLED
SOLDERING STATION **\$89⁹⁵**
#1562695

WTCPT - 60 WATT SOLDERING STATION **\$83⁹⁹**
#1723113

POWER TOOLS

MASTER APPLIANCE DESIGNERS AND MANUFACTURERS OF HEAT TOOLS FOR INDUSTRY

PH-1200 - VARITEMP VERSION OF THE PROHEAT
PROVIDES TEMPERATURES FROM AMBIENT 1050° F **\$109**
#1679250

PH-1100 - NEWEST COMPACT, LIGHTWEIGHT HEAT GUN
FOR INDUSTRY PROVIDES TWO HEAT SETTINGS **\$54⁹⁵**
570° F & 1050° F
#1667082

HAND TOOLS

CooperTools

DEDICATED TO PROVIDING A COMPREHENSIVE LINE OF QUALITY TOOLS AND EQUIPMENT

74CGV - 4" PLIERS IDEAL FOR TIP CUTTING
IN DELICATE ELECTRONIC CIRCUIT WORK. **\$19⁵⁹**
#85189

SDR11 - 5 ROUND BLADE SCREWDRIVERS FOR
SLOTTED SCREWS. R182, R5324, R3166, R144, & R5166 **\$17⁹⁹**
#135853

X103V - NO.3 PHILIPS SCREWDRIVERS 6"/152mm **\$5⁹⁹**
#71159

R186V - ROUND BLADE SCREWDRIVER 16"/152mm **\$2⁷⁹**
#71088

ALLEN

SPECIALLY DESIGNED FOR DEMANDING INDUSTRIAL TOOL USERS. ORIGINAL ALLEN WRENCH

56161 - 8 PIECE CUSION-GRIP T-HANDLE SETS **\$19⁹⁹**
#1739271

56369 - 9 METRIC MULTI-ANGLE HEX SET **\$15⁹⁹**
#1686559

56340 - 12 PIECE BALL POINT KEYS SET **\$13⁹⁹**
#1686537

56349 - 7 BIT METRIC FOLDING WRENCH SET **\$8⁹⁹**
#1739259

SHATTUCK INDUSTRIES — COMMITTED TO THE DYNAMIC NEEDS OF DESIGN AND INSTALLATION PROFESSIONALS

30-5HL - 5 1/2 NEEDLE NOSE LONG AND NARROW PLIERS **\$34⁹⁹**
#1455395

45-1001 - RG59 COAX WIRE AND CABLE STRIPPER **\$29⁹⁵**
#1591903

85-0025 - ROUND CABLE AND WIRE CUTTER **\$18⁵⁵**
#1649789

85-0026 - COAX CABLE CENTER CONDUCTOR TRIMMER **\$9⁹⁵**
#1567210

POWER TOOLS

DREMEL® GREAT PRECISION WOODWORKING, REFINISHING MODEL BUILDING AND CRAFT PROJECTS

2750 - SINGLE SPEED MOTO TOOL KIT (28,000 RPM) **\$49⁹⁵**
#1740459

750 - MINI MITE CORDLESS ROTARY TOOL INCLUDES
REMOVABLE BATTERY PACK, 3 HOUR CHARGER AND
FIVE PRECISION TOOL BITS **\$39⁹⁵**
#1740471

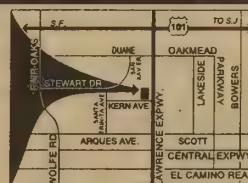
FRY'S ELECTRONICS
Prices good through
March 3, 1993

Home of Fast, Friendly,
Courteous Service

HOURS:
MON-FRI
8AM-9PM
SATURDAY
9AM-8PM
SUNDAY
9AM-7PM

VISA AND
MASTERCARD

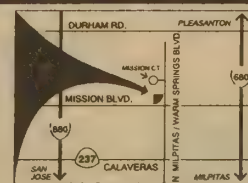
CORPORATE P.O. FAX #



SUNNYVALE
1177 Kern Ave.
(408) 733-1770
(408) 735-6800



PALO ALTO
340 Portage Ave.
(415) 496-6000
(415) 496-6060



FREMONT
440 Mission Ct.
(510) 770-FRYS (3797)
(510) 770-3700

On Locating Addresses On The Internet,

Find Your Friends And Email Your Enemies

BY KEVIN M.
SAVETZ

The Internet is a vast place. Over a million computers and hundred million users are connected in this sprawling anarchy of data. Both newcomers and old-timers often want to find the electronic address of an associate. With an electronic mail address in hand, you can send electronic notes, love letters, or secret messages to your associates, friends, and enemies.

The problem is finding them.

With so many computer systems and users in the world, it is impossible to keep a complete "white pages" of the Internet. The problem is compounded because people—especially students—come and go from the net all the time. Storing and updating that much information would be an impossible task.

But it's not impossible to find people on the net. Programs exist which, given some amount of information about your victim—er, associate—can help you track down his or her email address. The more information you know about your associate—name, place of business or school, and so on—the higher your chances are. If you want to get in touch with a pal from your past, but you don't know where he works or what city he lives in, you're not likely to locate him, even if he is on the net.

Of course, to be listed in any of these services, you need to have an account on the Internet; and, to some extent, you must want to be found.

The systems we will look at are finger, netfind, the MIT Usenet search, and Knowbot Information System. Each system works differently. Even though you may find someone when using one service, there is, of course, no guarantee she will be listed in another. There is no guarantee you will find her at all.

FINGER

UNIX, VMS, and some other systems support a command called "finger." Finger can give basic information about a user on a given computer. It usually allows searches by first name, last name, or login name. To list users named Ron on your local system, "finger ron" should produce a list of everyone whose name or login contains "Ron." Finger may return

information including the user's real name, login, and a phone number and other personal information, if these are supplied.

On many systems, finger allows you to peruse the users of other systems. "Finger ron@hal.gnu.ai.mit.edu" will tell you about the Rons with accounts on a certain computer at Massachusetts Institute of Technology. This in itself is not too powerful, however, because it requires that you know the name of the computer system you are searching. When you are searching for an associate, this usually isn't the case. Once you know the computer system and login name, you really know enough to send electronic mail.

Finger's power, however, grows when used in conjunction with services such as netfind, which scour the network for the names you

themselves from the outside world. Some sites, for privacy or security reasons, do not allow offsite users to finger their computers or access other information. Although this may be best for the company, it hinders netfind, which uses this information, when it can, to search.

Netfind can be used either as a client program running on your local computer, or accessed by telnetting to one of several public servers. The public servers don't require the netfind software to be on your local host, so we'll look at that venue for searching.

To use netfind, telnet to bruno.cs.colorado.edu (or another netfind server, listed below) armed with the name to search for, and his or her place of business or school. At the "login" prompt, type "netfind." Servers are limited to a certain number of searches at any given time, so you may be denied access. If so, try again later or choose a different server.

Netfind displays a menu of selections. To search for a specific person, enter "2" (search). You'll then be asked to "enter person and keys." Enter one word for the name, followed by one or more words defining where to look. For instance, "simon san diego state univer-

EXAMPLE OUTPUT FROM "FINGER" COMMAND

```
% finger john@euclid.humboldt.edu
[euclid.humboldt.edu]
Login name: john In real life: John
Wallace
Directory: /usr/john
No Plan.
Login name: jmoore In real life: John
Moore
Directory: /usr/jmoore
No Plan.
```

want, given just an idea of where to look.

NETFIND

Netfind is a "white pages" service that uses a number of sources to find electronic mail addresses. Netfind can locate users at over five thousand sites worldwide. The majority of the domains it can access are educational institutions, so this service is very good for locating students at school. However, netfind can also access a vast number of commercial, military, government, and other organizational computers. Its operators estimate that it can locate about 5.5 million people. Netfind is used interactively, and is relatively quick.

It works best for sites that do not insulate

PUBLIC NETFIND SERVERS

bruno.cs.colorado.edu
(128.138.243.151) [University of Colorado]
archie.au (139.130.4.6) [AARNet, Melbourne, Australia]
malloco.ing.puc.cl (146.155.1.43)
[Catholic University of Chile, Santiago]
mudhoney.micro.umn.edu
(134.84.132.7) [University of Minnesota, Minneapolis]
netfind.oc.com (192.82.215.92)
[OpenConnect System, Dallas, Texas]
redmont.cis.uab.edu (138.26.64.4)
[University of Alabama, Birmingham]
sun.uakom.cs (192.108.131.11)
[Slovak Academy of Sciences]

Technoland

We Do Business Your Way!
(408) 524-9188



CRUISER-325 & 433C PROJECTION NOTEBOOK

- Built-In Track Ball
- 80 MB Removable Hard Drive
- 1.44 MB Floppy Drive
- 110/220V 50/60Hz Autoswitch
- DC Powered Cooling System
- 85-Key w/Built-in Numeric Keyboard
- Two Rechargeable Ni-Cad Batteries

CRUISER-325

w/640x480 VGA CCFT LCD
180 Degree Adjustable Screen
4 MB Exp. to 8 MB
w/64KB Cache Memory

SPECIAL PRICE . . \$2688

"It's a wonder no one did it before." A slideshow created in a presentation graphics package can be projected exactly as it would be displayed on screen. Given the cost of having OHP transparencies made by a bureau, this is very appealing."

CALL TODAY! FOR MORE DETAILS OR TO ARRANGE A DEMONSTRATION

- 1 Serial, 1 Parallel Ports
- External Keyboard • VGA CRT Connections
- Deluxe Carrying Bag w/Manuals
- Weight: 5.5 LB
- Optional Built-in FAX/Modem
- Optional LAN, Voice, Scanner Adapter
- Optional IC Card and Digitizer

CRUISER-433C

256 Color TFT Active Matrix VGA Display
180 Degree Adjustable Screen
8 MB RAM
w/64KB Cache Memory

SPECIAL PRICE . . \$6150

TECH 486DX/DX2 BASIC SYSTEMS

OPTI Chip-Set, Write-Back Cache, 1 MB RAM, Up to 32 MB, 1.2 MB Floppy Drive, IDE Host Adapter with I/O, 2 Ser/1 Par/1 Game Ports Mid-Tower Case with 200W Power Supply, Enhanced 101 Keyboard

486DX-33/50, 256K \$678/828
486DX2-50/66, 256K \$788/938
LB 486-33/50, 256K \$728/888
LB 486DX2-50/66 \$848/998
EISA 486DX-33/50 \$878/1028

TECH 386SX/DX BASIC SYSTEMS

1 MB RAM, Up to 32 MB for DX, 8 MB For SX, 1.2 MB Floppy Drive, IDE Host Adapter with I/O 2 Ser/1 Par/1 Game Ports, Mid-Tower Case with 200W Power Supply, Enhanced 101 Keyboard.

386SX-25 \$298
386SX-33 \$308
386DX-33 128K Cache \$398
386DX-40 128K Cache \$398

OUT OF MEMORY?

Memory Express Service:

- **FREE** In-Shop Installation
 - Fast & Friendly Services
 - On-Site Service Available
 - Includes Notebook & Laptops
 - Satisfaction Guaranteed!
 - **Call Today!**
- 1MBx9-80/70NS . . . \$33**
4MBx9-80/70NS . . . \$136
16MBx9-70NS . . . \$630
DRAM RAM CALL

CD-ROM KIT SPECIAL!

MULTIPRO PHOTO STARTER KIT

- Kodak Photo CD Compatible
- Mitsumi CD-ROM 340ms
- Interface Kit
- New Multisession Drive
- Kodak Photo Sampler on CD
- Kodak CD Access Software

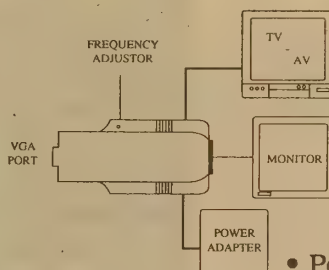
BEST PRICE \$339
List Price: \$419

CD-ROM UPGRADE KIT

- Includes CD-ROM Starter Kit Shown On The Left PLUS—
- Battle Chess CD Enhancement
- Windows 3.1
- WINDAT
- Monologue Speech Synthesizer
- 8-bit Sound Card
- Speakers
- Jukebox and Sound Tracks
- CD-Player and Soundscript

BEST VALUE \$435

PUT YOUR COMPUTER SCREEN ON TV!



Perfect For:

- Business Presentations
- Classroom Presentations
- Laptop Users
- Playing Games On Big Screen
- Computer Based Training

- Pocket Size Adapter
- Converts VGA Signal to NTSC Format
- Recordable Through VCR
- Includes: Software Driver, 120V DC Power Adapter, User's Manual, RCA Video Cable.

SPECIAL LIMITED TIME OFFER \$149
Expires Jan. 31, 1993

COME SEE OUR SHOWROOM!

1 Block Away From Price Club At The Intersection of Kifer and Copper

3485 KIFER ROAD
SANTA CLARA, CA 95051

TEL: (408) 524-9188

Fax: (408) 524-9193

24 HOUR INFORMATION

BY FAX: (408) 524-9195

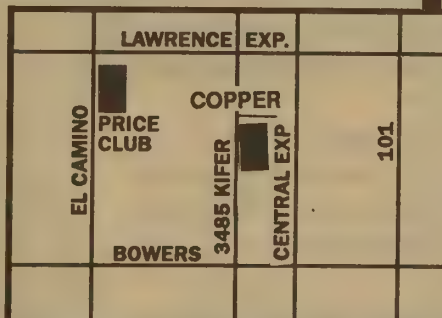
9 AM - 6 PM MON - FRI

10 AM - 5 PM SAT



Prices subject to change w/o notice, not responsible for typographic errors

- No** Surcharge for Credit Card Purchases
- No** Annoying Voice Mail Answering Machines
- Yes** We Gladly Accept P.O.'s From Corp., Educ. and Government Accounts
- Yes** We Will MEET or BEAT ANY ADVERTISED PRICE!



sity" will check for San Diego State in netfind's seed database. If it has something to go on, it will begin checking domain names for the keys. If not, try a less restrictive key (in this case, just "san diego.")

Next is a search for hosts. Netfind uses several remote services, including the "finger" command and the Simple Mail Transfer Protocol (STMP) to simultaneously query each computer that might have an account name, in this case "Simon." (It's actually much more complicated than that: a full explanation is available online.)

If netfind finds too many machines that match your keys, it will list them and ask you to choose up to three.

If a potential match is made, netfind gives you as much information as it can. If there is no match, or it can't get access to information from a secure site, you are told why.

Incidentally, choice "3" from the main menu, seed database lookup, lists all the computers associated with an organization, but does not look for a specific person.

KNOWBOT INFORMATION SERVICE

The Knowbot Information Service (KIS) is another "white pages" service that performs a very broad name search, checking MCI Mail, the X.500 White Pages Pilot Project, WHOIS servers at various organizations, and the UNIX "finger" command. It can be used either as a client program resident on your local machine, through email, or by telneting to a public server.

KIS uses subprograms called "Knowbots" to search for information. Each Knowbot looks for specific information from a site, and reports back to the main program with the results.

Two hosts running KIS servers are "nri.reston.va.us" and "sol.bucknell.edu." You can access either one by electronic mail (send mail to netaddress@nri.reston.va.us, for instance) or using telnet (request port 185.) Because searching can take several minutes, I prefer to use the mail method—once KIS knows the results of the search, it mails them back to you.

In the body of your mail message to netaddress, simply put names of your associates, one per line. You may use first and last names or a login, if you know it. Sending "johnson" will search the default list of directory servers for user "johnson." Since KIS checks a predefined set of services, you do not need to supply an organization name to check for.

KIS also includes commands for narrowing your search and searching for an organization. For more help, put "?" or "man" in the body of your mail message.

AN INTERACTIVE NETFIND SESSION

Top level choices:

1. Help
2. Search
3. Seed database lookup
4. Options
5. Quit (exit server)

→ 2

Enter person and keys (blank to exit)
→ simon san diego state university

(0) check_name: checking domain sdsu.edu. Level = 0 (1)

check_name: checking domain sdsu.calstate.edu. Level = 0

The domain 'sdsu.calstate.edu' does not run its own name servers, and there is no aliased domain IP address for this domain.

-> Skipping domain search phase for this domain.

(0) do_connect: Finger service not available on host sdsu.edu -> cannot do user lookup

Search of domains completed.
Proceeding to search of hosts.

(0) check_name: checking host sciences.sdsu.edu. Level = 0

(2) check_name: checking host steer.sdsu.edu. Level = 0

(3) check_name: checking host saturn.sdsu.edu. Level = 0

(4) check_name: checking host ucseis.sdsu.edu. Level = 0

SYSTEM: sunstroke.sdsu.edu

Login name: dsimon In real life: David Simon

Directory: /sunstroke/faculty/dsimon
Shell: /bin/csh

Last login Fri Dec 4 16:09 on pop from lif_sci_s1-mac7

No unread mail

No Plan.

Login name: alsimon In real life: Al Simon

Directory: /sunstroke/faculty/alsimon
Shell: /bin/csh

Last login Thu Dec 3 11:50 on tty7 from mdmsrv9.sdsu.edu

Mail last read Wed Dec 2 11:46:40 1992

No Plan.

(9) do_connect: Finger service not available on host birooni.sdsu.edu -> cannot do user lookup

SUMMARY:

- Found multiple matches for "simon", so unable to determine most recent/last login information, or most promising electronic mail information.

Please look at the above search history and decide for yourself which is best.

USENET SEARCH

The Usenet search is an interesting variation in ways to look for people on the net. This method compares your search request to a database of people who have recently posted messages to the Usenet. (The Usenet is a worldwide bulletin board of sorts, where people send public messages on every imaginable topic.)

SAMPLE OUTPUT FROM THE USENET SEARCH

send usenet-addresses/George Washington

>From daemon@pit-manager.MIT.EDU Tue Dec 15 16:21:37 1992

Date: Tue, 15 Dec 92 19:21:04 -0500

To: waffle@steer.sdsu.edu (waffle)

Subject: mail-server: "send usenet-addresses/George Washington"

gw@washington.burial.site (George Washington) (Oct 11 92)

hustler@u.washington.edu (hustler@milton.u.washington.edu) (Apr 1 92)

Goofster@u.washington.edu (goofster@milton.u.washington.edu) (Apr 1 92)

George Porter

<george_porter@LIBRARY.LIB.NCSU.EDU> (Apr 12 92)

George.Izumi@p0.f129.n102.z1.fidonet.org (George Izumi) (Apr 12 92)

george@cs.purdue.EDU (Michael J. George) (Apr 12 92)

George.Dvorak@f303.n273.z1.fidonet.org (George Dvorak) (Apr 1 92)

george@eos03a-16pa.eos.ncsu.edu (George J. Gad El-Karim) (Apr 12 92)

george_mah@sfu.ca (george mah) (Apr 1 92)

gng@gaia.UUCP (George George) (Apr 1 92)

george@jvd.msk.su (George Tereshko) (Apr 1 92)

This search, obviously, can only find people who have recently sent a message to the Usenet. If you think your associate is a regular poster to the Usenet, you might want to try this. You use the Usenet search by sending electronic mail to a server that processes your query and replies by email. Thus, it is not interactive like the Netfind search, and it may take longer to get a reply. This search is beneficial because you do not need to know where your associate works or goes to school—just a name can be enough.

To look up a name, send a message to



STOP SEARCHING AROUND! HITRON HAS THE RIGHT SYSTEM AT THE RIGHT PRICE!!

LIFETIME LABOR WARRANTY!

HITRON FILE SERVER

486DX2-66 MHz EISA
\$2659

486DX-50 MHz EISA
\$2559

486DX-33 MHz EISA
\$2299

- 64K CACHE EXPANDABLE TO 256K
- 8 MB EXP TO 32 MB
- 1.2 MB FDD
- 340 MB SCSI HARD DRIVE
- MGP DISPLAY CARD
- 14" MONOCHROME MONITOR
- FULL TOWER CASE
- W/250 PS
- ADAPTEC SCSI EISA CONTROLLER
- I/O 2 SERIAL/1 PARALLEL/1 GAME PORT
- 101 ENHANCED KEYBOARD

**FOR MORE OPTIONS,
PLEASE CALL**

HITRON SUPER IDEAL SYSTEMS FOR CAD & WINDOWS

VESA LOCAL BUS

**MICRONICS
MOTHERBOARD**

486DX2-66 MHz
\$1999

486DX-33 MHz
\$1699

- 64K CACHE EXP TO 256K
- 4 MB RAM EXP TO 32 MB
- 1.2 MB FDD
- 170 MB IDE HARD DRIVE
- 32 BIT 1 MB VIDEO CARD w/ET 4000
- 14" SVGA COLOR MONITOR w/.28dp (1024 X 768)
- MINI-TOWER CASE w/200 P.S.
- 32-BIT 2FDD/2 HDD CONTROLLER
- I/O 2 SERIAL/1 PARALLEL/1 GAME
- 101 ENHANCED KEYBOARD
- HI-RES SERIAL MOUSE

MONTHLY SPECIALS

WITH ANY SYSTEM PURCHASE
BUY A CREATIVE LABS
MULTIMEDIA

- ONLY
\$510
- UPGRADE KIT
 - Panasonic CD-ROM
 - Sound Blaster Pro
 - 7 CD Software

HITRON HIGH PERFORMANCE SYSTEMS

486DX2-66 MHz
\$1629

486DX-50 MHz
\$1539

486DX2-50 MHz
\$1449

486DX-33 MHz
\$1279

- 64K CACHE EXP TO 256K
- 4 MB RAM EXP TO 32 MB
- 1.2 MB FDD
- 120 MB IDE HARD DRIVE
- SVGA DISPLAY CARD w/512K
- 14" SVGA COLOR MONITOR w/.28dp (1024 X 768)
- MINI-TOWER CASE w/200 P.S.
- 2FDD/2 HDD IDE CONTROLLER CARD
- I/O 2 SERIAL/1 PARALLEL/1 GAME
- 101 ENHANCED KEYBOARD

BLOWOUT SPECIALS!

486SX-33 MHz
\$1089

486SX-25 MHz
\$1029

386DX-40 MHz
\$925

386DX-33 MHz
\$925

- 64K CACHE EXP TO 256K
- 4 MB RAM EXP TO 32 MB
- 1.2 MB FDD
- 120 MB IDE HARD DRIVE
- SVGA DISPLAY CARD w/512K RAM
- 14" SVGA COLOR MONITOR w/.39dp (1024 X 768)
- MINI-TOWER CASE w/200 P.S.
- 2FDD/2 HDD IDE CONTROLLER CARD
- I/O 2 SERIAL/1 PARALLEL/1 GAME
- 101 ENHANCED KEYBOARD

HITRON NOTEBOOKS

- 60 MB HARD DISK
 - 1.44 MB FLOPPY DRIVE
 - VGA RESOLUTION
 - I/O-1 SERIAL/1 PRINTER PORT
 - EXT KEYBOARD AND VGA CONNECTOR
 - CARRYING CASE
 - DOS 5.0 AND WINDOWS 3.1
- FOR MORE UPGRADE OPTIONS CALL!

386SX-25 w/2 MB ...\$1195
386SX-25 w/4 MB ...\$1245
386SL-25 w/2 MB,
16K Cache\$1495
386SL-25 w/4 MB,
16K Cache\$1565

LIFETIME TECH SUPPORT!

NETWORKING AVAILABLE!

COMPLETE LINE OF NETWORKING SOFTWARE AND HARDWARE, SOFTWARE INSTALLATION

NETWORKING START-UP KITS:

- 386 WORKSTATIONS
- NETWORKING CARD & HUB
- NETWORKING SOFTWARE & INSTALLATION

AS LOW
AS \$1200

FOR MORE INFORMATION PLEASE CALL US!

CALL FOR PERIPHERALS AND CUSTOM CONFIGURATIONS

*LIFETIME LABOR
WARRANTY

*LIFETIME TECH SUPPORT

*30 DAYS MONEY BACK

*NATIONWIDE ON-SITE
SERVICE AVAILABLE

*CORPORATE PO'S WELCOME

*CORPORATE LEASING
AVAILABLE

FOR MORE OPTIONS OR INFORMATION PLEASE CALL:



HITRON SYSTEMS

3170 EL CAMINO REAL

SANTA CLARA, CA 95051

(BETWEEN LAWRENCE EXP. & SAN TOMAS EXP.)

TEL: (408) 261-2695 • Fax: (408) 261-2698

Prices Subject to Change w/o Notice MON-FRI 9-6, SAT 10:30-5

"mail-server@pit-manager.mit.edu." The server will ignore the subject line. In the body of your message, send "send usenet-addresses/keys." "Keys" can be one or more search words separated by spaces. It can be the first and last name, a login name, or the name of an organization. (If you send only the name of an organization, you will receive a list of all the posters from that place.)

You can guess about the words that may appear in the address of the person you are searching for: it's okay if some of the keys don't appear in the address. The search program uses "fuzzy" matching and tries to find

addresses that are closest to your keywords. Forty or fewer matches will be returned, listed from "best" to "worst."

For more help, send a message to mail-server@pit-manager.mit.edu with a message body of "send usenet-addresses/help." If you need to talk to a real person, send mail to "postmaster@pit-manager.mit.edu." The online help

should be all you need, though.

WHAT ABOUT PRIVACY?

Each of these information resources uses only "public" information from computers that are open to outside access from the Internet. As mentioned before, some sites are more limited for privacy or security reasons. In open sites, however, some users may be unaware that information about them is available. Sometimes, standard information available includes not only an electronic mail address, but a phone number, fax number, or office address.

If you feel the need to protect yourself, you are not totally without aid. You may be able to limit the amount of information available to the outside world. On some UNIX systems, the command "chfn". (change finger name) will allow you to change your name and other data as it appears on your system. Also, many computers allow you to create a file called ".plan" for information about yourself—this is readable by anyone. Don't keep anything there that you don't want the world to know.

The help text on netfind sums it up best: "I have come to the conclusion that resource discovery and directory service are fundamentally at tension with privacy. I believe that while policies are needed, ultimately users need to be made aware that participation in an 'electronic society' brings with it some loss of privacy, just as being a member of any

society does."

FOR MORE INFORMATION

If all of these services fail you, don't despair. There are other services out there, run by businesses that list only their employees, for instance. Although some of these services are checked by KIS and netfind, many are not.

Also, don't forget the other ways to find someone: pick up the phone and call, or write a letter. Remember that even if you do find the right email address, the owner may never check his or her mail!

For more information, read: "FAQ: How to find people's E-mail addresses," available from mail-server@pit-manager.mit.edu by sending "send usenet/news.answers/finding-addresses."

A useful book is !%@: A Directory of Electronic Mail Addressing and Networks by Donnalyn Frey and Rick Adams. ISBN 0-937175-15-3, published by O'Reilly, Email nuts@ora.com for information. (Current edition published in January 1991; \$27.95 cover price.)

Another is *Zen and the Art of the Internet: A Beginner's Guide*, by Brendan Kehoe, Prentice Hall, July 1992. ISBN 0-13-010778-6. (Second edition.) The first edition is available for free online. To find out how to get it, send mail to archive-server@cs.widener.edu with "send zen hints" in the body of the message. ■

AN INTERACTIVE KIS SEARCH

Knowbot Information Service (V1.0).
Copyright CNRI 1990. All Rights Reserved.

Try ? or man for help.

> Smedley

Name: John X. Smedley

Organization: Smedley Research

City: New York

State: NY

Country: US

E-Mail: 123-4692@mcimail.com

Source: mcimail

Ident: 123-4692

Last Updated: unknown



NOVELL®

C.N.E.

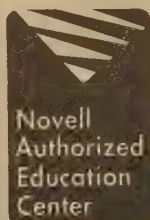
For a Higher Degree of Mastery

Experts agree, just as some degrees help you in business or science, your Novell CNE and ECNE degree increase your expertise as a networking specialist. That's why more and more companies are either hiring or training their own CNEs at Certified Network Educators.

CNE Quick Course

If you're already proficient with Novell, it's easier than ever to obtain your degree by registering for the CNE Quick Course. Produced by Novell's CNE program developer, the CNE Quick Course is offered only by Certified Network Educators, and allows CNE certification in just 5 days.

CNE/ECNE Certification is closer than you think.



Call 1-800-LAN-STUDY
(800-526-7883)

- Woodland Hills
- San Francisco

**Certified
Network
Educators**

Be sure to ask for a free CNE ASSESSMENT TEST DISK.

FIRST TIME EVER, SAVE BIG \$\$\$ DIRT CHEAP ASSEMBLE YOUR OWN... SPARC/UNIX Workstation

or
READY MADE

• NEW OR USED CPU BOARDS • EXTERNAL PERIPHERALS
FOR SPARC • CHASSIS/POWER SUPPLY • MEMORY • CABLES
• SOLARIS O/S • PC-NFS • ISLAND GRAPHICS • 10 BASET
HUBS • SBUS ADD-ON AND MUCH MORE!

(ALSO SYSTEMS ADMINISTRATION ON SPARCS AND PC'S FOR ONLY \$250 PER MONTH)
BASED ON CONFIGURATIONS

CALL **1-800-22SUNAR**
or (408) 982-0288 • FAX: (408) 982-9369

**SUNAR
SYSTEMS**

THE COMPLETE SOURCE FOR SPARC/UNIX NETWORKS

SPARC is a registered trademark of SPARC Inc. • Solaris and PC-NFS is a registered trademark of SunSoft

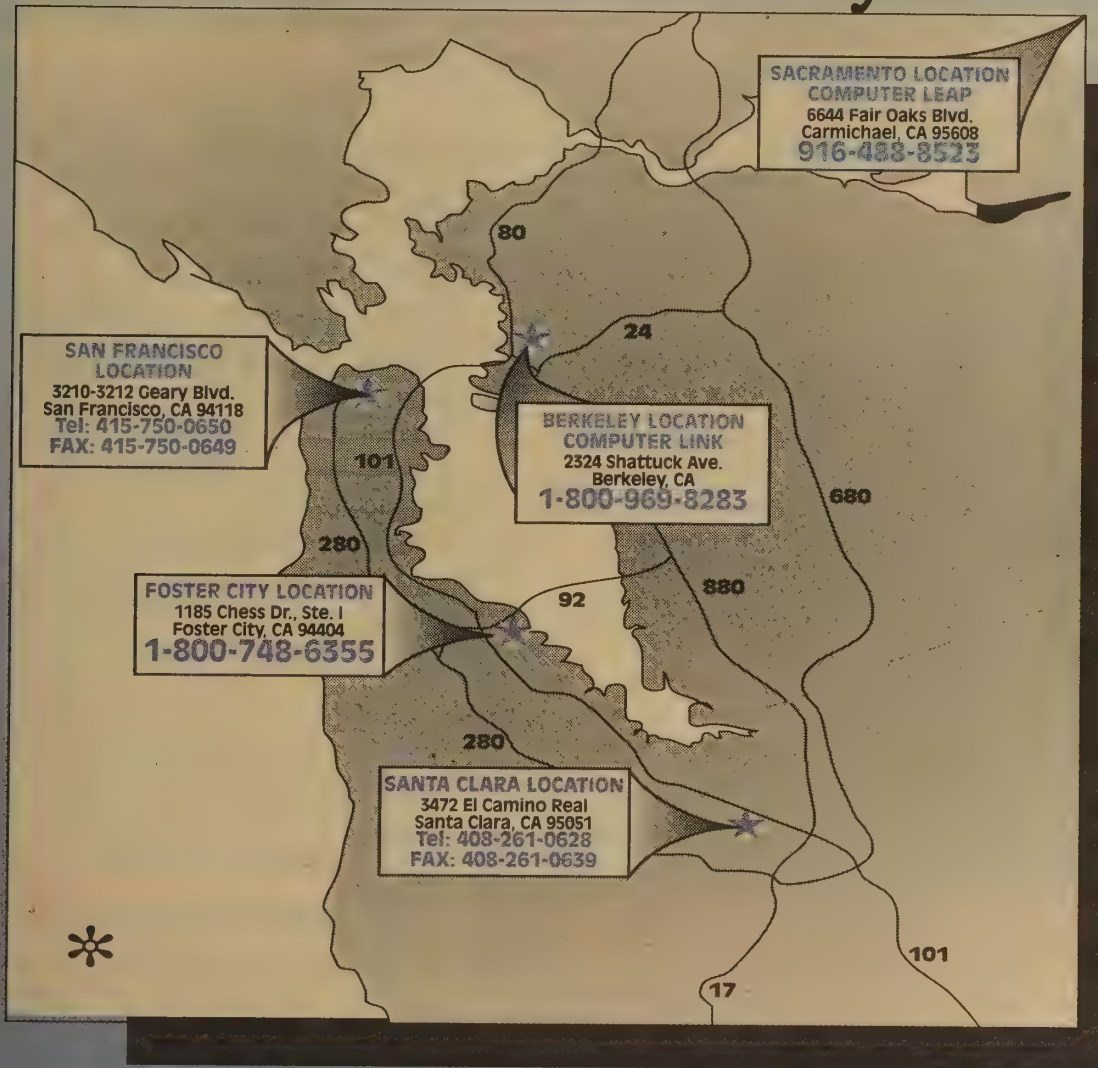
E-Mail: sunar@netcom.com
3350 Scott Blvd. Ste. 1901
Santa Clara, Ca 95054



MICROLINK

DATA SYSTEMS INC.

5 Locations for your Convenience....



We Support:

NOVELL

SCO
THE SANTA CRUZ OPERATION

OS/2

AUTOCAD

BERKELEY / OAKLAND

1-800-969-8283

SOFTWARE TRAINING
ALL COURSES \$50.00

- Monday WINDOWS 3.1
- Tuesday WORD 2.0 FOR WINDOWS
- Wednesday EXCEL 4.0
- Thursday DBASE IV



SACRAMENTO

916-488-8523



SAN FRANCISCO

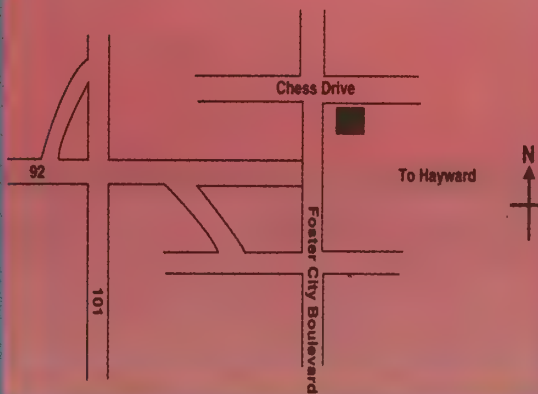
415-750-0650

FAX: 415-750-0649



FOSTER CITY

1-800-938-7888



SANTA CLARA

408-261-0628

FAX: 408-261-0639



Monday thru Friday 9am ~ 6pm . Saturday 10am ~ 5pm



VESA LOCAL BUS...

The Ultimate Machine For Windows...



32-BIT

Ends the Search for the Power Hungry...

- Intel486® Microprocessor
- Built-in Math-CoProcessor
- FULL Tower w/ **UL** 250W & Speed Display
- AMI BIOS with Built-in Setup Utilities
- 256K of 20ns Cache
- 4 MB of 70ns RAM exp. to 32MB
- 130MB 15ms HD w/ 64k Cache
- TEAC 1.2 and 1.44MB Floppy Drives
- VESA **16.7M** Colors SVGA Card w/ 1MB
- 14" Non-Interlaced SVGA Color Monitor (HITACHI Tube, 0.28mm, 1024x768)
- 101 Enhanced-Style Keyboard
- 2 Serial/1 Parallel/1 Game Ports
- **Free** Microsoft DOS 5.0 & Windows 3.1
- **Free** 3-Button Hi-Resolution Mouse

486DX2-66MHz.....	\$2075
486DX-50MHz.....	\$1875
486DX-33MHz.....	\$1675

UPGRADE OPTIONS

VESA S3 Accelerator w/ 1MB.....	+\$95
ATI Ultra Pro w/ 2MB VRAM.....	\$345
ATI Ultra Plus w/ 2MB DRAM.....	\$235
VESA IDE Controller.....	\$65
VESA IDE w/ 1MB Cache	\$225
VESA SCSI Controller.....	CALL
VESA Network LAN Card	CALL



- Intel486® Microprocessor
- Built-in Math-CoProcessor (DX Only)
- Baby Desktop w/ **UL** 235W Power Supply
- AMI BIOS with Built-in Setup Utilities
- 64K of 20ns Fast Cache Memory
- 4 MB of 70ns RAM exp. to 32MB
- 85MB 15ms HD w/ 32k Cache
- TEAC 1.2 and 1.44MB Floppy Drives
- 16-Bit SVGA Card w/ 1MB
- 14" SVGA Color Monitor(1024x768, 0.28mm)
- 101 Enhanced-Style Keyboard
- 2 Serial/1 Parallel/1 Game Ports
- **Free** Microsoft DOS 5.0 & Windows 3.1
- **Free** 3-Button Hi-Resolution Mouse

486DX2-66MHz.....	\$1745
486DX-50MHz.....	\$1575
486DX-33MHz.....	\$1375
486SX-33MHz.....	CALL
486SX-25MHz.....	\$1225

MDS Specializes in Custom Configurations.
Super Tower, File Servers, CAD Stations,
2 Giga Bytes Hard Drives, etc...

UPGRADES & OPTIONS

MULTIMEDIA

- Panasonic 340ms MPC CD ROM
- Sound Blaster Pro & Midi Kit
- Two Mini Stereo Speakers
- Creative Lab Standard 6 CDs:
- MS Windows 3.1 Master
- MS Works for Windows
- Sherlock Holmes
- Creative Sounds
- Software Library
- MS Bookshelf

\$545

STORAGE/Fans

- On-Board Memory\$40/MB
- 85 to 130MB HDD\$65
- 130 to 210MB HDD\$135
- 210 to 340MB HDD\$345
- 340 to 540MB HDD\$395
- SCSI HDDs Call
- 120/250MB Tape Backup ...\$195
- Tape for 120/250MB\$25
- 2nd Cooling Fan\$25
- CPU Heat Sink/Fan\$25

DISPLAY

- SVGA to Diamond 24X\$125
- SVGA to Fahrenheit/Stealth \$145
- SVGA to ATI Ultra\$195
- SVGA to ATI Ultra Pro\$395
- 14" 1024I to 14" 1024NI ...\$50
- 14" 1024NI to 15" 1280NI.\$145
- 15" 1280NI to 17" 1280NI.\$425
- 14" NI to ViewSonic 6E ...\$50
- ViewSonic, MAG, NEC,
SONY, Nanao Call

MODEM

- 9600/2400 Fax/Modem\$65
- 9600/14400 Fax/Modem\$225
- 2400Modem\$40

NETWORK

- 16-Bit Bus Ethernet Coax ..\$115
- 16-Bit Bus Ethernet 10-BT \$115
- Cables, Connectors Call
- NOVELL Software Call
- SMC/WD, 3Com Call



* The Intel Inside Logo is a registered trademark of Intel Corporation

THE MDS PROMISES
Quality Everywhere

- 1-year parts & 3-year labor warranty
- 30-day money back guarantee
- 30-day instant replacement policy
- Lifetime toll-free technical support
- 72-hour RARITON dynamic burning test
- On-site service available in U.S.A. & Canada
- PO's of qualified corporations and institutions welcome
- Leasing & net terms available for qualified customers

Check With Your Local Better Business Bureau! For 8 years in this industry, we surely know how to build your system right the first time. Our satisfied customers include NASA, PG&E, Stanford University, Pacific Bell, and many more.....



SAN FRANCISCO
3210-3212 GEARY BLVD.
SAN FRANCISCO, CA 94118
800-748-6269
(MON-SAT 9AM-6PM)

FOSTER CITY
1185 CHESS DRIVE
FOSTER CITY, CA 94404
800-938-7555
(MON-FRI 9AM-6PM)

SANTA CLARA
3472 EL CAMINO REAL
SANTA CLARA, CA 95051
800-675-5465
(MON-SAT 9AM-6PM)

BERKELEY
2324 SHATTUCK AVE.
BERKELEY, CA 94704
510-540-8283
(MON-SAT 9AM-6PM)

SACRAMENTO
6644 FAIR OAKS BLVD.
CARMICHAEL, CA 95608
916-488-8523
(MON-SAT 9AM-6PM)

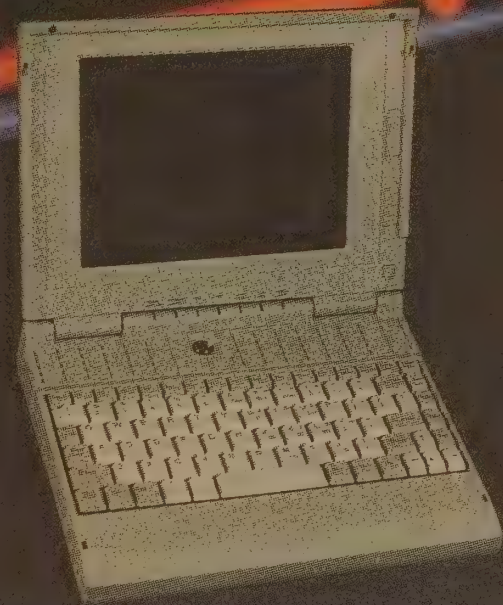
Bring Windows Power On The Road...



MDS Maxi Jetbook

- Weight 6.6 lbs; Dim: 11.2 x 8.9 x 1.9
- 10" Hitachi 63 Gray Scale LCD-VGA
- 3.5 Hrs. Ni-Cad. Built-in Battery
- 90V to 260V Autoswitchable Adaptor
- Intel486DX® -33 CPU
- Built-in Math Coprocessor (DX only)
- 8k Burst Mode Cache
- 32k External Cache
- 4mb 70ns RAM (Exp. to 8 or 32)
- 85mb HDD (125/210mb Optional)
- 1.44mb Internal FDD
- 85-key w/ 12 Dedicated Function Keys
- Inversed "T" Arrow Keys
- Serial, Parallel, Scanner, Keyboard, VGA, PS/2 Mouse, AT Bus Ports
- Resume/ Suspend Power Management
- Built-in Track Ball
- Built-in Fax/Modem (Optional)
- Battery Low Visual/Audible Alarm
- Int. SmartCharger™ w/ Overcharger Protection
- Comfortable Typing Hand-Rest
- Support Ext. SVGA Monitor
- Support Docking Station
- Support Ext. 1.2mb FDD
- Free MS DOS 5.0/ Windows 3.1
- Free Carrying Case
- 1-year Parts and Labor Warranty

MAXI PLUS i486 JETBOOK



**BANG!
BANG!**

486DX-33MHz
\$2,395

486SX-25MHz
\$2,195

Active Matrix **COLOR** VGA
..... **CALL**

UPGRADE OPTIONS

- 4mb to 8mb RAM\$225
- 85mb to 125mb HDD\$150
- 85mb to 210mb HDD\$445
- Int. 24/96 S/R Fax/Modem\$125
- Pocket Fax/Modem\$125
- Docking Station (Color)\$295
- Docking Station (Jetbook) ..\$345
- Ethernet Coaxial Adaptor ..\$175
- Extra Battery Pack Call

COLOR NOTEBOOK



- Weight 6.6 lbs; Dim: 11 x 8.5 x 2
- 9" STN Color LCD VGA
- Intel486DX® -33 CPU
- Built-in Math Coprocessor
- 8k Burst Mode Cache
- 4mb 70ns RAM (Exp. to 8 or 20)
- 85mb HDD (125/210mb Optional)
- 1.44mb Internal FDD
- Inversed "T" Arrow Keys
- 2 Serial, 1 Parallel, Keyboard, VGA and AT Bus Ports
- Resume/ Suspend Power Management
- Free MS DOS 5.0/ Windows 3.1
- Free Carrying Case; Numeric Key Pad
- 1-year Parts and Labor Warranty

486DX2-66MHz.....**\$3095**

486DX-33MHz.....**\$2195**

MAXI PORTABLES



- Contains Intel486® Microprocessor
- LCD Display
(Gas Plasma or Color LCD/ CRT Available)
- 64K 20ns Cache Memory
- 4 MB of 70ns RAM exp. to 32MB
- 130MB 15ms HD w/ 64k Cache
- TEAC 1.2MB \$1.44MB Floppy Drives
- 16 Bit SVGA Card & 640x480 Display
- Support 1024x768 Ext. Display (Gas Plasma/ CRT)
- 110/220V Auto-Switchable Power Supply
- 2 Serial/1 Parallel/1 Game Ports
- Free Heavy Duty Carrying Case Included
- Free High Resolution Mouse
- Free Microsoft DOS 5.0 & Windows 3.1

486DX-50MHz.....**\$2145**

486DX-33MHz.....**\$1945**

486SX-33MHz.....**\$1845**

GAS PLASMA (12:1).....**+\$250**
GAS PLASMA (150:1).....**+\$500**
COLOR CRT (SONY Trinitron).....**+\$600**
COLOR LCD.....**+\$1250**

ORDERING INFORMATION:

MasterCard and Visa Accepted. Leasing and net-terms available to qualified customers. Shipping and handling are additional. C.O.D. orders add \$10 special handling charge. Call for special UPS Red/Blue terms. No sales tax outside of CA. Products labeled FREE on advertising are not covered by warranty. All returns must have RMA# issued by our Customer Service Department (415-571-5193). All returns must be shipped with original packaging, invoice, and documentation pre-insured and pre-paid. Incomplete, or unauthorized returns are non-refundable or subject to restocking charge. Returns of products not listed in the standard configured are subject to a 20% restocking charge. Refunds will be granted less deductions on freight, insurance, and corresponding charges related to the payment. All prices and specifications are subject to change without notice. MDS is not responsible for typographic errors.



An Envelope Addresser That Works

Whether You Print Addresses On Labels Or Directly Onto Envelopes You Can Finally Say Good-By To Your Old Typewriter

BY ED
KAHN

Computers are terrific! But there are certain chores that just don't work smoothly with these machines. Addressing envelopes is often a major difficulty. There are ways to work around the problem, but nevertheless, this is one of those inconveniences of working with computers. In the old days, I had a printer that was little more than a glorified typewriter. I spun in each sheet of paper, each postcard, each envelope. As a result, I was able to make up a template for addressing envelopes. Finally I worked it

The Smart Label Printer Plus from Seiko lets me print labels that will go practically anywhere—envelopes, packages, file folders or wherever they are needed.

RESOURCES:

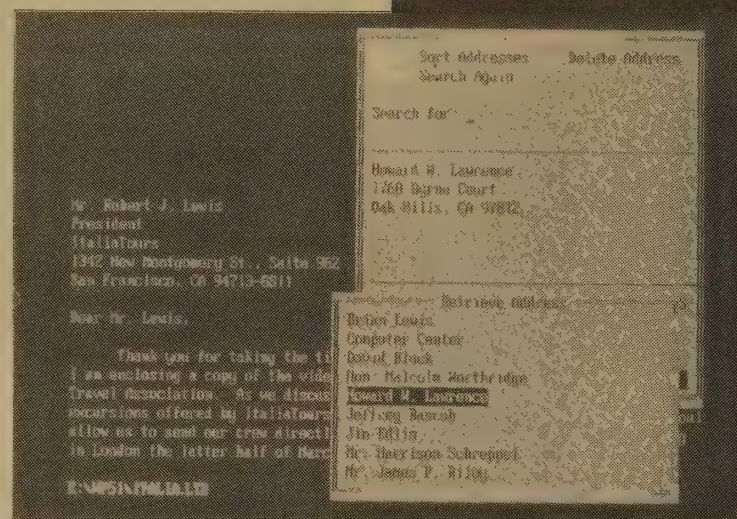
AddressMate, \$99.95
AddressMate
Software, Inc.
6715 Canyon Trail
El Cerrito, CA
94530-1705
(510)237-7460

Smart Label Printer Plus, \$249.95
Seiko Instruments
USA, Inc.
1130 Ringwood Ct.
San Jose, CA 95131
(408)922-5900

out so I could attach my envelope template to my letter and treat the envelope as a second page.

Eventually, I got a more sophisticated printer and my addressing system went out the window. But in came a great little program that was designed to address envelopes. After typing each letter, I would open the envelope program and print the address. But a new inconvenience arose—I was not now required to open this second program. I had to either retype in the address—running the risk of making a mistake—or transfer the address from the letterhead to the envelope program. What I really wanted was software that worked transparently. Like my printer churns out my letters, I wanted it to print my envelopes.

The Smart Label Printer Plus from Seiko lets me print labels that will go practically anywhere—envelopes, packages, file folders



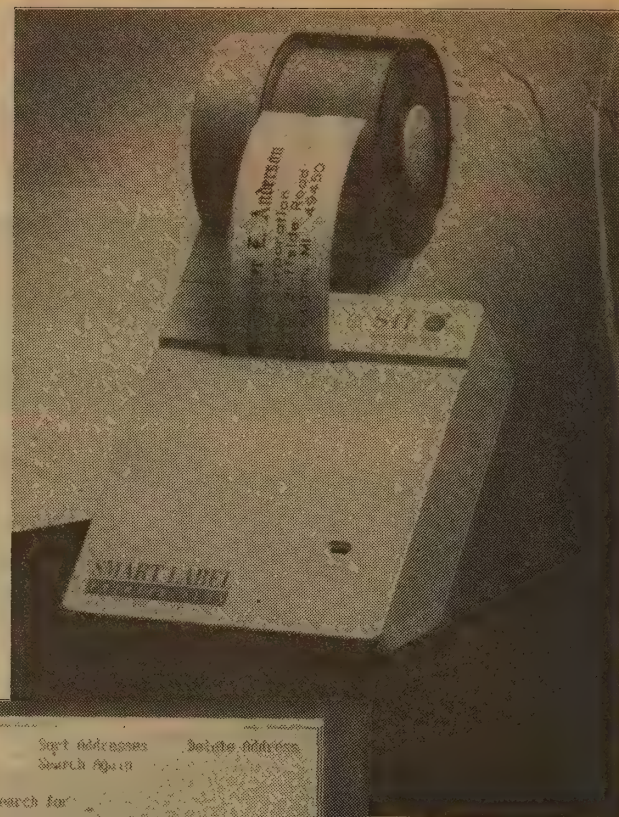
Address Mate includes an integrated database to store your addresses.

or wherever they are needed. This is a fabulous product. It has excellent software that captures the address from letters and transfers them to the printer. It also has a database that holds onto your list of addresses. It is available in versions for DOS, DOS and Windows, and the Mac. It is wonderful to use and does an excellent job of printing addresses, but you still are working with a label and not printing directly onto an envelope. While I have no intention of parting with my Smart Label Printer, I have still been searching for a way to print envelopes with virtually no effort on my part. Am I asking too much?

Apparently not, someone else had the same idea, but did more than wish. David Block developed AddressMate to run on the Hewlett-Packard LaserJet and compatible printers.

AddressMate is memory resident—it installs on top of whatever application you are running. The program monitors the output going to the printer and when it finds an address, beeps as well as captures the information. You then give the printer an envelope and it does the rest. In a moment, you receive an addressed envelope and, if you want, it will also print your return address.

The program does a lot more than just the basics. If you zip+4 codes, AddressMate will



Seiko's Smart-Label Printer Plus.

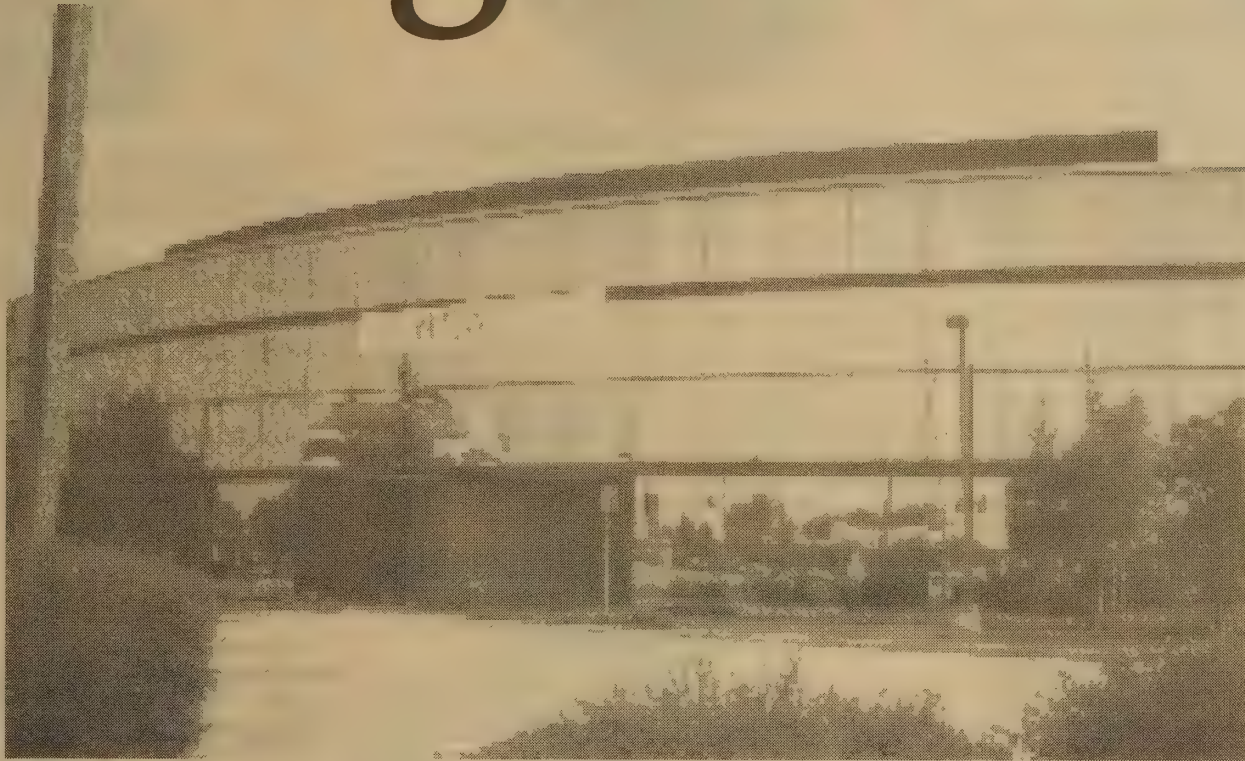
also print a bar code on the bottom of the envelope to help the post office speed your letter on its way.

Although the program is designed to work transparently with no interaction from you, it includes other features. Typing Control, Alt, E you get a menu to access the options. You can add addresses to a database and recall as needed to print either an envelope or a label. AddressMate saves all of your addresses and can print them as a batch. If you have an envelope tray, this is especially useful. And finally, you can grab an address anywhere from a document that is on-screen and have an envelope printed.

AddressMate gives you a selection of typefaces to use and recognizes different typefaces from the documents you sent to the printer. The folks at AddressMate Software have thought of everything. If you have the required hardware—an IBM compatible and a Hewlett-Packard LaserJet or compatible printer—you are in luck. AddressMate lists for \$69.95.

I had an earlier version of the AddressMate. While it was good and got the job done, there were some cumbersome procedures. The company has responded to feedback from users, making significant changes. The version of AddressMate now on the market works beautifully and I highly recommend it. Finally, the last vestigial need for a typewriter in the office has vanished. ■

Here We Grow Again...



Feb 93 GUIDE to:

The largest selection of Memory Storage Products, Worldwide.

RELIABILITY: We only sell the best! **BRAND NEW** equipment, *NO Refurbished or Reconditioned* items.

WARRANTIES: Up to 5 YEARS full manufacturers warranty at **NO EXTRA CHARGE****

SATISFACTION: NCA will make sure that the proper assistance is delivered to all our customers for a 100% total satisfaction. **GUARANTEED**

PRICE: Due to the backing of specific Vendors and coupled with large quantity orders, we are able to pass along the tremendous savings to the end user.

CONTINUED BUSINESS: 67% of our business is from repeat and referral customers. We believe our service continues to stem from the personal side of our staff.

DRIVE KEY TERMS

IDE: (Integrated Drive Electronics) Works with most PC's.

SCSI: (Small Computer System Interface) STD for MAC, SUN, NeXT. and compatible with PC's (SCSI Controller Required)

SPEED: The Average Access Time (in milliseconds) lower is faster.

FH: 5.25" Full Height Physical size.

HH: 5.25" Half Height Physical size.

INTERNAL: SCSI or IDE Drive Bare.

EXTERNAL: SCSI Drive in enclosure with Universal power supply and cables.

Special Handling

CORPORATE ACCOUNTS: Corporate, Educational Institutions, Gov't Agencies - *ALL Welcome!* Our corporate department can meet your needs large or small.

CORPORATE INQUIRIES

(408) 522-8672

Mon-Fri 8:30A-6:00P PST

or **FAX (408) 739-2420**

DEALER SUPPORT: Domestic and International departments with dealer network worldwide. We take care of our dealers.

DEALER INQUIRIES

(408) 522-8673

Mon-Fri 8:30A-5:30P PST

INTERNATIONAL ORDERS:

International orders taken via

FAX 24Hrs. (408) 739-2420

or **CALL (408) 522-8674**

Mastercard, Visa, & Wire transfers accepted.



NCA

Awesome Value, Awesome Service

DIRECTORY

CABLES	pg8
CACHE MEMORY	pg7
CD ROMs	pg5
CD ROM titles	pg5
CONTROLLER CARDS	pg3
COMPUTER CASES	pg8
COPROCESSORS	pg7
CPU	pg7
FLOPPY DRIVES	pg8
HARD DRIVES (SCSI, IDE)	pg2,3
KEYBOARDS	pg8
MEMORY (SIMMS, DIPPS...)	pg7
MODEMS, FAX/MODEMS	pg8
MONITORS	pg8
MOTHERBOARDS	pg7
OPTICAL DRIVES	pg6
POINTING DEVICES	pg8
SYQUEST REMOVABLE	pg6
TAPES & MEDIA	pg8
TAPE BACK-UP	pg4

HARD DRIVE SUPER SOURCE

Quantum

Brand new with two year factory warranty



IDE

CAPACITY	M/N	CACHE	SPEED	SIZE	PRICE
42MB	ELS42A	32K	19ms	3.5X1"	\$159
52MB	LPS52A	64K	11ms	3.5X1"	\$169
85MB	ELS85A	32K	17ms	3.5X1"	\$199
105MB	LPS105A	64K	<12ms	3.5X1"	\$219
120MB	LPS120A	256K	Fast	3.5X1"	\$319
127MB	ELS127A	32K	17ms	3.5X1"	\$259
170MB	ELS170A	32K	17ms	3.5X1"	\$289
240MB	LPS240A	256K	Fast	3.5X1"	\$409
425MB	PD425A	256K	<11	3.5"	\$879

SCSI

CAPACITY	M/N	CACHE	SPEED	SIZE	INT.	EXT.
42MB	ELS42S	32K	19ms	3.5X1"	\$169	\$279
52MB	LPS52S	64K	11ms	3.5X1"	\$199	\$309
85MB	ELS85S	32K	17ms	3.5X1"	\$219	\$329
105MB	LPS105S	64K	<11ms	3.5X1"	\$299	\$409
120MB	LPS120S	256K	Fast	3.5X1"	\$329	\$439
127MB	ELS127S	32K	17ms	3.5X1"	\$289	\$399
170MB	ELS170S	32K	17ms	3.5X1"	\$339	\$449
240MB	LPS240S	256K	Fast	3.5X1"	\$439	\$549
425MB	PD425S	256K	<11	3.5"	\$879	\$989
525MB	LPS525	256K	Fast	3.5X1"	\$969	\$1079
700MB	PD700	256K	<10	3.5"	\$1199	\$1309
1.2GB	P1225	512	<10	3.5"	\$1499	\$1609

Seagate

Factory new with full factory warranty

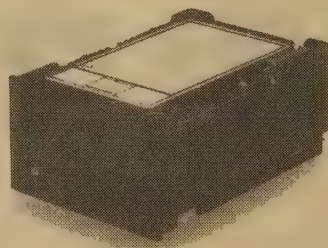
IDE

CAPACITY	M/N	CACHE	SPEED	SIZE	PRICE
42MB	ST351	32K	19ms	3.5X1"	\$139
107MB	ST3120	64K	15ms	3.5X1"	\$229
130MB	ST3144A	64K	15ms	3.5X1"	\$259
240MB	ST3283A	256K	12ms	3.5X1"	\$449

SCSI

CAPACITY	M/N	CACHE	SPEED	SIZE	INT.	EXT.
240MB	ST3283N	256K	12ms	3.5X1"	\$469	\$579
670MB	ST4766N	256K	14ms	FH	\$1139	\$1339
670MB	ST4767N	256K	11ms	FH	\$1399	\$1599
1.2GB	ST11200N	256K	10ms	3.5"	\$1549	\$1749
1.2GB	ST41200N	256K	14ms	FH	\$1369	\$1569
1.6GB	ELITE-I	X	11ms	FH	\$1949	\$2149
1.6GB	ST41651	256K	14ms	FH	\$1749	\$1949
2.1GB	ST42100N	256K	14ms	FH	\$1969	\$2169
2.4GB	ELITE-II	X	11ms	FH	\$2599	\$2799
3.4GB	ELITE-III	X	11ms	FH	\$3999	\$4199

MICROPOLIS



Brand new with 5-year factory warranty

SCSI-II / Fast SCSI-II

CAPACITY	M/N	RPM	SPEED	SIZE	INT.	EXT.
340MB	MC1684	3600	14ms	HH	\$1099	\$1209
670MB	MC1624	3600	14ms	HH	\$1149	\$1259
1.2GB	MC2112	5400	10ms	3.5"	\$1649	\$1759
1.2GB	MC1598	3600	15ms	FH	\$1439	\$1639
1.5GB	MC1528	3600	15ms	FH	\$1799	\$1999
1.6GB	MC1908	5400	11ms	FH	\$1999	\$2199
2.0GB	MC1548	3600	14ms	FH	\$1999	\$2199
2.4GB	MC1924	5600	11ms	FH	\$2699	\$2899

Maxtor

Brand new with one year factory warranty

IDE

CAPACITY	M/N	CACHE	SPEED	SIZE	PRICE
80MB	2580A	32K	16ms	2.5"	\$219
120MB	25120A	32K	15ms	2.5"	\$329

80MB	7080A	32K	15ms	3.5X1"	\$199
130MB	7120A	64K	15ms	3.5X1"	\$239
213MB	7213A	64K	15ms	3.5X1"	\$339
340MB	LXT340A	64K	15ms	3.5"	\$579
535MB	LXT535A	64K	12ms	3.5"	\$899

SCSI

CAPACITY	M/N	CACHE	SPEED	SIZE	INT.	EXT.
130MB	7120S	64K	15ms	3.5X1"	\$249	\$359
213MB	7213S	64K	15ms	3.5X1"	\$359	\$469
340MB	LXT340S	64K	15ms	3.5"	\$589	\$699
535MB	LXT535S	64K	12ms	3.5"	\$929	\$1039
540MB	MAGIK540	256K	8ms	3.5X1"	\$1049	\$1159
1.2GB	MAGIK1240	512K	8ms	3.5"	\$1839	\$1949
1.2GB	PO12S	256K	13ms	FH	\$1299	\$1499
1.7GB	P117	256K	13ms	FH	\$1539	\$1739



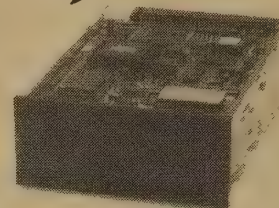
HEWLETT PACKARD

Brand new with 5-year factory warranty

SCSI

CAPACITY	M/N	CACHE	SPEED	SIZE	INT.	EXT.
1.2GB	C2247	256K	3.5"	10ms	\$2689	\$2799
1.2GB	C97558	256K	FH	13ms	\$1699	\$1899
1.8GB	C3009	256K	FH	11.5ms	\$2689	\$2889
2.3GB	C3010	256K	FH	11.5ms	\$2899	\$3099

FUJITSU



Brand new with 5-year warranty

IDE

CAPACITY	M/N	CACHE	SPEED	SIZE	PRICE
330MB	M2622T	64K	12ms	3.5"	\$599
425MB	M2623T	64K	12ms	3.5"	\$859
520MB	M2624T	64K	12ms	3.5"	\$889

SCSI

CAPACITY	M/N	CACHE	SPEED	SIZE	INT.	EXT.
425MB	M2623FA	240K	11ms	3.5"	\$859	\$969
520MB	M2624FA	240K	11ms	3.5"	\$889	\$999
1.2GB	M2694SA	256K	10ms	3.5"	\$1599	\$1709
1.2GB	M2266SA	256K	14ms	FH	\$1299	\$1499
2.0GB	M2652SA	256K	11ms	FH	\$2099	\$2299
2.4GB	M2654SA	256K	12ms	FH	\$2499	\$2699

CONNER

Brand new with one year factory warranty

IDE

CAPACITY	M/N	CACHE	SPEED	SIZE	PRICE
40MB	CP3000	32K	25ms	3.5X1"	\$135
60MB	CP30064	32K	17ms	3.5X1"	\$165
80MB	CP30084	64K	19ms	3.5X1"	\$195
120MB	CP30104H	32K	19ms	3.5X1"	\$235
170MB	CP30174E	64K	17ms	3.5X1"	\$255
212MB	CP30204	256K	12ms	3.5X1"	\$339
250MB	CP30254	64K	14ms	3.5"	\$369
540MB	CP3544	256K	12ms	3.5"	\$889
540MB	CP30544	256K	<12ms	3.5X1"	\$CALL

SCSI

CAPACITY	M/N	CACHE	SPEED	SIZE	INT.	EXT.
40MB	CP3040	32K	25ms	3.5X1"	\$159	\$269
80MB	CP30080	32K	19ms	3.5X1"	\$219	\$329
170MB	CP30170	64K	17ms	3.5X1"	\$289	\$399
212MB	CP30200	256K	12ms	3.5X1"	\$369	\$479
540MB	CP3540	256K	12ms	3.5"	\$939	\$1049



WESTERN DIGITAL

Brand new with 2-year factory warranty

IDE

Caviar Series

CAPACITY	M/N	CACHE	SPEED	SIZE	PRICE
80MB	WD280	64K	16ms	3.5X1"	\$189
120MB	WD2120	64K	<14	3.5X1"	\$249
170MB	WD2170	64K	<15	3.5X1"	\$269
212MB	WD2200	64K	12ms	3.5X1"	\$339
340MB	WD2340	64K	12ms	3.5X1"	\$569

the NEW NCA BUILDING Corner of LAWRENCE EXPWY & KIFER RD



NCA
PERIPHERALS

Awesome Value, Awesome Service

Mon-Fri 9-7; Sat 10-6; Sun 10-4.

1202 Kifer Rd. Sunnyvale, CA 94086
(408) 739-9010

CORPORATE, Gov't. & Univ. Accts

Dealers Accts.

FAX FOR P.O.'S

408 522-8672 408 522-8673 408 739-2420

PURCHASE ORDERS WELCOME (Supplier of Fortune 1000 Companies)
Gov't, University, & Approved Corporate P.O.s Welcome
CORPORATE DEPT. (408) 522-8672

NO SURCHARGE FOR listed CREDIT CARDS
All Items are Brand New with Full Factory Warranty.
Tech Support for MAC and IBM Compatibles.
Full Installation Center for all our Hard Drives.
We Ship World Wide.
Dealers Qty Pricing is Available.



HARD DRIVE SUPER SOURCE

TOSHIBA

**BEST
VALUE**

Superior Quality and Value

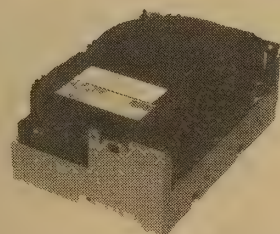
Brand new with 5-year factory warranty

SCSI-II

CAPACITY	M/N	CACHE	SPEED	SIZE	INT.	EXT.
877MB	MK438FB	512K	12ms	3.5"	\$1079	\$1189
1.2GB	MK538FB	512K	12ms	3.5"	\$1399	\$1509



HITACHI®



High-End Storage Solutions

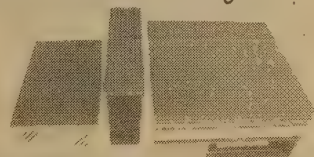
SCSI-II / ESDI*

CAPACITY	M/N	RPM	SIZE	TYPE	INT.	EXT.
1.1GB	DK315C-11	5400	3.5"	FAST SCSI-2	\$1699	\$1899
1.4GB	DK315C-14	5400	3.5"	FAST SCSI-2	\$2099	\$2299
1.5GB	DK516-15*	3600	FH	ESDI	\$2199	N/A
1.6GB	DK516C-16	3600	FH	SCSI-2	\$2199	\$2399
3.7GB	DK517-37	5400	FH	FAST SCSI-2	\$3999	\$4199

NCA's High Quality

EXTERNAL DRIVES

For MAC, SUN, NeXT, and IBM Compatibles
Complete with Cables, and formatting Software for Mac



- ◆ EXT. HARD DISK DRIVES:
42MB TO 3.4GB
- ◆ EXT. TAPE BACK-UP DRIVES:
250MB TO 8GB
- ◆ EXT. CD ROM DRIVES
- ◆ EXT. OPTICAL DRIVES

GREAT DEALS

IDE

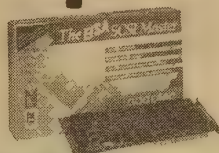
CAPACITY	MAKE	SPEED	SIZE	WARRANTY	PRICE
105MB	ALPS	13ms	3.5X1"	1 YR.	\$219
105MB	TEAC	19ms	3.5X1"	1 YR.	\$209
120MB	SAMSUNG	17ms	3.5X1"	2 YR.	\$239

SCSI

CAPACITY	MAKE	SPEED	SIZE	WARR.	INT.	EXT.
40MB	KALOK	25ms	3.5X1"	1 YR.	\$109	\$229
200MB	BRAND TECH	16MS	3.5"	1 YR.	\$369	\$479

SCSI CONTROLLERS

adaptec



SCSI CONTROLLERS

MODEL	DESCRIPTION	PRICE
1522	16 BIT 7HD/2FD KIT	\$159
1542BK	16 BIT BUS MASTER 7HD/2FD KIT	\$259
1542B+	1542BK+COREL SCSI	\$329
1640	MICROCHANNEL FOR PS/2, 7HD	\$329
1742	EISA KIT, 32 BIT, 7HD/2FD	\$449

ada always technology

SCSI CONTROLLERS

MODEL	DESCRIPTION	PRICE
IN2000	16 BIT 7HD/2FD "Easest to use"	\$179
AL1000	SCSI TO PARALLEL W/BACKUP SOFTWARE	\$169

FUTURE DOMAIN

SCSI CONTROLLERS

MODEL	DESCRIPTION	PRICE
MC600	FOR PS/2, CARD	\$179
TMC850	8 BIT CARD	\$59
TMC1670	KIT 2HD/2FD	\$159
TMC1680	16 BIT CARD	\$169
TMC1680	16 BIT, 7HD/4FD COMPLETE KIT	\$249
TMC7000	32 BIT, EISA KIT	\$CALL

Intellegent

SCSI CONTROLLERS

MODEL	DESCRIPTION	PRICE
X	16-BIT, 7HD/2FD SCSI CARD	\$119



FULL KITS W/DRIVERS FOR CD-ROM/OPTICAL... ETC.

SCSI CONTROLLERS

MODEL	DESCRIPTION	PRICE
T128F	8 BIT, HIGH PERF., 7HD/4FD	\$119
T130	8 BIT, HIGH PERF., 7HD	\$79
T160	16 BIT, HIGH PERF.	\$CALL
T228	MICROCHANNEL, 7HD	\$159
T260	16-BIT, MICROCHANNEL	\$CALL
T338	PARALLEL PORT to SCSI ADAPTER	\$119
T348	PARALLEL PORT to SCSI PLUS	\$179

MBoxDOS S/W to run music CDs on CD ROMS	\$39
TapeMate S/W for Tape Back-up	\$59

ItraStor



SCSI CONTROLLERS

MODEL	DESCRIPTION	PRICE
14F	FD/HD (10MB/SEC) KIT	\$229
24F	EISA, 64K, Fast (33MB/SEC)	\$389
34F	VESA Local Bus Controller	\$295

DATA TECHNOLOGY CORPORATION

SCSI CONTROLLERS

MODEL	DESCRIPTION	PRICE
3290AS	EISA, 32-BIT CACHING WITH 512K	\$479



<0.3 ms, Fast, Uses Standard 256K, 1X9, 4X9 Simms Modules

SCSI CONTROLLERS

MODEL	DESCRIPTION	PRICE
DC2040	CACHING 16 BIT W/OMB (UP TO 16M)	\$259

IDE CONTROLLERS

STANDARD IDE

IDE CONTROLLERS

MODEL	DESCRIPTION	PRICE
200	2HD/2FD CONTROLLER W/CABLES	\$15
211	2HD/2FD W/2SERIAL, 1PAR, 1GAME	\$25
NCL53	SMART CONT. W/BIOS EASY INSTALL	\$49



IDE CONTROLLERS

MODEL	DESCRIPTION	PRICE
DC2031	CACHING OMB (EXP. TO 16MB) 2HD/2FD	\$169
DC2032	CACHING WITH I/O, 4HD/3FD	\$189

ItraStor

IDE CONTROLLERS

MODEL	DESCRIPTION	PRICE
15C	CACHING (UP TO 16MB), 2HD, 2FD	\$199



- ◆ Easy Set-up
- ◆ High Performance
- ◆ Plug & Play

IDE CONTROLLERS

MODEL	DESCRIPTION	PRICE
18V	CO-EXIST, HIGH PERF.	\$59
21V	2HD (WITH BIOS), 4FD (UP TO 2.88M)	\$69

the NEW NCA BUILDING - Corner of LAWRENCE EXPWY & KIFER RD



NCA
PERIPHERALS

Awesome Value, Awesome Service

Mon-Fri 9-7; Sat 10-6; Sun 10-4.

1202 Kifer Rd. Sunnyvale, CA 94086
(408) 739-9010

CORPORATE, Gov't. & Univ. Accts Dealers Accts FAX for PO's
408 522-8672 408 522-8673 408 739-2420

PURCHASE ORDERS WELCOME (Supplier of Fortune 1000 Companies)
Gov't, University, & Approved Corporate P.O.s Welcome
CORPORATE DEPT. (408) 522-8672

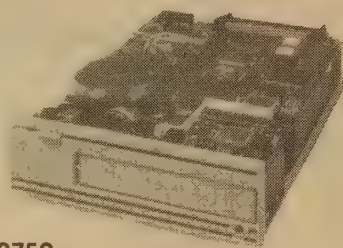
NO SURCHARGE FOR listed CREDIT CARDS
All Items are Brand New with Full Factory Warranty.
Tech Support for MAC and IBM Compatibles
Full Installation Center for all our Hard Drives.
We Ship World Wide
Dealers Qty Pricing is Available.



TAPE BACK-UP SUPER SOURCE

ARCHIVE

for IBM Compatibles, MAC, SUN, & NeXT



ANACONDA 2750

◆ 1.6GB	◆ 36MB/MIN	◆ SCSI-2
INT.		EXT.
\$999		\$1099

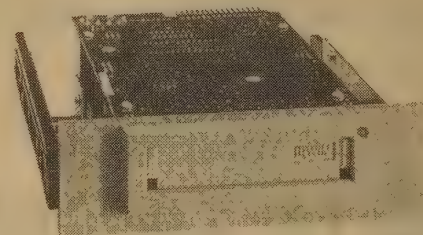
The BEST name in SCSI Back-up Drives

2150		VIPER™	2525	
◆ 250MB VIPER			◆ 525MB VIPER	
◆ 6MB/SEC.			◆ 6MB/SEC.	
INT.	EXT.		INT.	EXT.
\$469	\$569		\$689	\$789

PYTHON	
4540NT	4542NT
◆ 2.0GB DAT 4mm	◆ 4-8GB DAT 4mm
◆ 11MB/SEC.	◆ 11MB/SEC.
INT.	EXT.
\$1149	\$1249

INT.	EXT.
\$1399	\$1499

IRWIN
An Archive Company



RUNS OFF FLOPPY PORT

CAPACITY	MODEL/TYPE	INT.
120MB	ARC120	\$175
250MB	ARC250	\$249

PARALLEL PRINTER PORT EXTERNAL TAPE BACK-UP

RUNS OFF PARALLEL PRINTER PORT

CAPACITY	MODEL/TYPE	EXT.
120MB	AccuTRAK 120	\$389
250MB	AccuTRAK 250	\$449

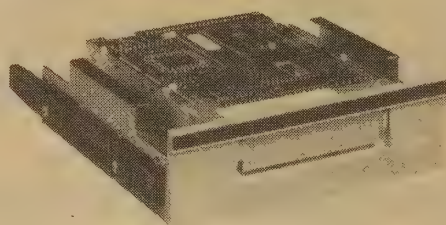
EXABYTE®

SUN compatible 8mm SCSI back up system

SCSI-8mm

CAPACITY	MODEL	SIZE	INT.	EXT.
2.2GB	EXB-8200	FH	\$1749	\$1949
2.2GB	EXB8205	HH	\$1849	\$2049
5.0GB	EXB-8500	FH	\$2699	\$2899
5.0GB	EXB-8505	HH	\$2799	\$2999

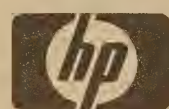
COLORADO
MEMORY SYSTEMS INC.



RUNS OFF FLOPPY PORT

CAPACITY	MODEL/TYPE	INT.
120MB	DJ10/IBM COMPATIBLE	\$189
250MB	DJ20/IBM COMPATIBLE	\$249

EXTERNAL KIT WITH CARD AND CABLES	\$109
EXTERNAL TAPE PORT	\$39
FC-10 TAPE CONTROLLER, WITH CABLES	\$89
FC-15 HIGH PERFORMANCE 16-BIT CONTROLLER	\$189



**HEWLETT
PACKARD**

Setting the Standards

SCSI 4mm DAT

CAPACITY	MODEL	INT.	EXT.
2.0GB	35470 DAT	\$1149	\$1249
4-8GB	35480 DAT	\$1399	\$1499

WangDAT™

SCSI QIC-Format

CAPACITY	MODEL/TYPE	INT.
250MB	5150 1/4" SCSI	\$469
525MB	5525 1/4" SCSI	\$699

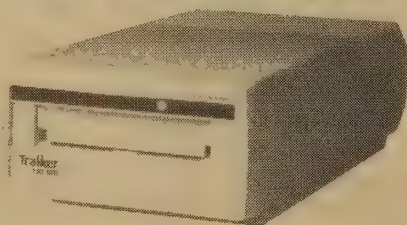
SCSI 4mm DAT

CAPACITY	MODEL/TYPE	INT.	EXT.
2.0GB	3100 DAT	\$1149	\$1249
4.0GB	3200 DAT	\$1249	\$1349

TAPE CARTRIDGES

CAPACITY	MODEL/TYPE	SINGLE	5-PACK
120MB	QD 2120	\$18.95	\$90.00
250MB	QD 6250	\$28.95	\$120.00
525MB	QD-6525	\$33.95	\$155.00
2.0GB	4mm DAT 90m	\$19.95	\$85.00
4.0GB	8mm EXABYTE	\$17.95	\$79.95

Trakker™

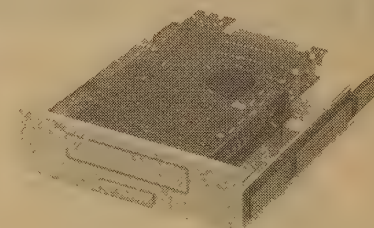


PARALLEL PRINTER PORT EXTERNAL TAPE BACK-UP SYSTEMS

RUNS OFF PARALLEL PRINTER PORT

CAPACITY	MODEL/TYPE	EXT.
120MB	TRAKKER 120	\$359
250MB	TRAKKER 250	\$419

SUMMIT™
MEMORY SYSTEMS INC.



WITH CENTRAL POINT BACKUP SOFTWARE

RUNS OFF FLOPPY PORT

CAPACITY	MODEL/TYPE	INT.
250MB	SE-250	\$239

BACKUP SOFTWARE

DESCRIPTION	PRICE
Sytos Plus™ for Adaptec	\$99

NovaStor
BEST BACK UP SOFTWARE

DESCRIPTION	PRICE
NovaBack for DOS	\$99
NovaBack for OS/2	\$149
NovaNet-Server Based Software (up to 100 users)	\$579

the NEW NCA BUILDING Corner of LAWRENCE EXPWY & KIFER RD

Awesome Value, Awesome Service

PURCHASE ORDERS WELCOME (Supplier of Fortune 1000 Companies)
Gov't, University, & Approved Corporate P.O.s Welcome
CORPORATE DEPT. (408) 522-8672

Mon-Fri 9-7; Sat 10-6; Sun 10-4.

1202 Kifer Rd. Sunnyvale, CA 94086
(408) 739-9010

NO SURCHARGE FOR LISTED CREDIT CARDS
All Items are Brand New with Full Factory Warranty.
Tech Support for MAC and IBM Compatibles
Full Installation Center for all our Hard Drives.
We Ship World Wide.
Dealers Qty Pricing is Available

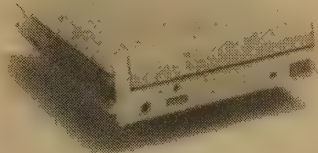


NCA
PERIPHERALS

CORPORATE, Gov't, & Univ. Accts Dealers Accts FAX for P.O.'S
408 522-8672 408 522-8673 408 739-2420

CD ROM SUPER SOURCE

TOSHIBA



XM-3401B
FASTEST CD-ROM EVER

- ▶ 200ms, 330KB/SEC.
- ▶ SCSI CD-ROM
- ▶ MULTI-SPIN/MULTI-SPEED
- ▶ 256K CACHE

INTERNAL \$499
EXTERNAL \$599

XM-3301B
WINDOWS-NT Compatible

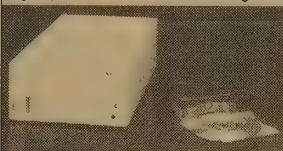
- ▶ 325ms
- ▶ SCSI CD-ROM

INTERNAL \$399
EXTERNAL \$499

8 BIT CD CONTROLLER KIT (Controller W/CD Driver S/W)\$79
16 BIT CD CONTROLLER KIT (Controller W/CD Driver S/W, by adaptec) ..\$159

PIONEER® DRM-604X

High Speed CD-ROM MiniChanger, featuring QUADRASPIN™, 612Kbyte/sec



- ▶ External SCSI/SCSI-2 Subsystem
- ▶ 6 CD ROM Magazine
- ▶ Software for MAC or IBM
- ▶ FAST 612KBytes/Sec
- ▶ 300ms

\$1399

NEC

- ▶ 280ms
- ▶ Multi-speed

CDR-84 INTERNAL\$559
CDR-74 EXTERNAL\$599

NEC MAC SOFTWARE KIT\$79
NEC IBM DRIVER KIT WITH 8 BIT CARD\$89

MEDIA VISION

PRO 16 UPGRADE KIT MULTIMEDIA SYSTEM

- ▶ PRO AUDIO SYSTEM 16
- ▶ CDR-84
- ▶ CD SOFTWARE: Carmen San Diego, Compton's Encyclopedia, Lotus 123, Kings Quest, MacroMind, Nautilus.

\$919

MULTIMEDIA PC UPGRADE KIT PLUS

- ▶ PRO AUDIO PLUS
- ▶ SONY CD ROM
- ▶ WINDOWS 3.1, Compton's Encyclopedia, Kings Quest, MacroMind, Nautilus

\$599

FUSION EXTERNAL 16

- ▶ 16bit Stereo Sound Card
- ▶ NEC External CD-ROM
- ▶ Amplified Stereo Speakers
- ▶ Bundled Software: Compton's Encyc., Carmen Sandiego, Ultima Wing Commander II

\$529

PRO AUDIO SPECTRUM 16.....\$189



MULTIMEDIA UPGRADE KIT

- ▶ SOUND GALAXY NX PRO STEREO CARD SUPPORTS SB PRO, COVEX SPEECH, ADLIB, & DISNEY SOUND
- ▶ INTERNAL MITSUMI CD ROM
- ▶ MICROPHONE
- ▶ STEREO SPEAKERS
- ▶ CD ROM SOFTWARE: (LOOM, CARMEN SAN DIEGO, DICTIONARY.... ETC.)

\$469

COREL SCSI SOFTWARE KIT

- ▶ 8 BIT SCSI CARD
- ▶ COREL SCSI DRIVERS
- ▶ COREL SCSI UTILITIES
- ▶ COREL CD-AUDIO for WINDOWS
- ▶ COREL TAPE BACKUP
- ▶ SITBACK SOFTWARE
- ▶ SCSI TOOLS for WINDOWS

\$99

TEXXEL

- ▶ SCSI CD
- ▶ FAST 265ms
- ▶ Multi-Spin
- ▶ DM-3024
- ▶ INTERNAL W/ CADDY

\$419

- ▶ DM-3024
- ▶ EXTERNAL W/CADDY

\$489

8 BIT CD CONTROLLER KIT (Controller W/CD Driver S/W).....\$69
16 BIT CD CONTROLLER KIT (Controller W/CD Driver S/W, by adaptec).....\$159

SONY

- ▶ 31A CD ROM
- ▶ CONTROLLER CARD

\$299

- ▶ 31A CD ROM
- ▶ CONTROLLER CARD
- ▶ 5 CD ROM TITLES

\$429

CREATIVE

CREATIVE LABS, INC

- ▶ SOUND BLASTER PRO BASIC\$149.99
- ▶ SOUND BLASTER PRO w/MIDI\$179.99
- ▶ SOUND BLASTER 16BIT\$249.99

MULTIMEDIA UPGRADE INTERNAL KIT

- ▶ CD ROM, SOUND BLASTER PRO
- ▶ SECECTED SOFTWARE

\$519

BEST VALUE

IBM 3510

COMPLETE EXTERNAL SCSI CD ROM

PC KIT

- ▶ SCSI CONTROLLER
- ▶ CD ROM DRIVERS
- ▶ CADDY
- ▶ CABLES

\$399

MAC KIT

- ▶ MAC SOFTWARE
- ▶ CADDY
- ▶ CABLES

\$379

While Supplies Last

MITSUMI

- ▶ MULTIMEDIA CD ROM
- ▶ INCLUDES 8 BIT CARD
- ▶ MPC READY / 350ms

\$239

GALLANT SOUND CARD

- ▶ SC-3000 SOUND CARD
- ▶ DYNAMIC STEREO SPEAKERS
- ▶ MICROPHONE
- ▶ SOFTWARE: STUNTS™ & GALLANT MASTER

\$109

CD ROM TITLES

Amanda Stories	\$69.99
American Bus, Phone Book	\$39.99
Annabelle's Dreams	\$99.99
Animals 1.0	\$49.99
Battle Chess Enhanced	\$49.99
Beauty & the Beast	\$39.99
Bring the World to Your Senses	\$39.99
Business & Economic Atlas	\$49.99
Carmen San Diego	\$49.99
CD Story time	\$39.99
CIA World FactBook	\$39.99
Chessmaster 3000	\$39.99
Composer Quest	\$79.99
Compton's MPC Encyclopedia	\$189.99
Corporate Snapshots	\$49.99
Desert Storm	\$39.99
Dictionary of the Living World	\$49.99
DTP Pro	\$39.99
Family Choice Britannica	\$49.99
Family Doctor	\$49.99
Family Education Collections	\$49.99
Geovision	\$39.99
Great Cities of the World Vol.1	\$39.99
Great Cities of the World Vol.2	\$39.99
International Graphics Library	\$39.99
Guinness MPC Disc of Records	\$39.99
Jets & Props	\$49.99
Jones in the Fast Lane	\$39.99
King's Quest V	\$49.99
Library of the Future 1st	\$79.99
Loom	\$49.99
Lotus 1-2-3	\$189.99
MacMillan Dic. for Dictionary	\$59.99
MacroMind Action (no Manual)	\$49.99
Magazine Rack	\$59.99
Marketing Master 1992	\$49.99
Mayo Clinic Family Health	\$69.99
Mavis Teacher Typing	\$49.99
Media Clips - 4 Pack	\$99.99
Micropross Collection on CD	\$49.99
Microsoft Bookshelf	\$99.99
Microsoft Works	\$99.99
Monkey Island	\$49.99
Ocean Digital Imagery Vol.1	\$49.99
Ocean Imagery	\$39.99
Mixed Up Mother Goose	\$39.99
PC-SIG 9th Edition	\$29.99
PC-SIG 10th Edition	\$49.99
Peter and the Wolf	\$39.99
People at leisure	\$39.99
Playing with Language English	\$59.99
Playing with Language French	\$59.99
Playing with Language German	\$59.99
Playing with Language Japanese	\$59.99
Playing with Language Spanish	\$59.99
Publish it 2.0	\$49.99
Reference Library	\$49.99
Secret Weapons of Luftwaffe	\$49.99
Sherlock Holmes Consulting Dat.	\$49.99
So Much Shareware I	\$39.99
So Much Shareware II	\$39.99
Stellar 7	\$39.99
TIME Almanac 1991	\$39.99
Time Table of History	\$39.99
Toolworks Groliers New Encyclopedia	\$99.99
Total Baseball	\$69.99
USA Wars: Civil Wars	\$69.99
USA Wars: Korea	\$69.99
USA Wars: Vietnam	\$69.99
US Atlas/ World Atlas	\$39.99
US Atlas & Automap	\$59.99
US History	\$59.99
Vital Signs	\$139.99
Wild Places	\$49.99
Wing Commander & Secret Miss.	\$49.99
Wing Commander & Ultima V	\$49.99
World Atlas v3.2	\$49.99
World View	\$49.99

... and Much, Much More.

CD ACCESSORIES

CADDY	\$8.99
AMPLIFIED Computer Speaker System SS100	\$24.99
AMPLIFIED Computer Speaker System CS150	\$28.99
AMPLIFIED Computer Speaker System CS550	\$34.99
Audio Cables	\$Call

the NEW NCA BUILDING Corner of LAWRENCE EXPWY & KIFER RD



NCA
PERIPHERALS

Awesome Value, Awesome Service

Mon-Fri 9-7; Sat 10-6; Sun 10-4.

1202 Kifer Rd. Sunnyvale, CA 94086
(408) 739-9010

CORPORATE, Gov't, & Univ. Accts

Dealers' Accts

FAK for P.O.s

408 522-8672 408 522-8673 408 739-2420

PURCHASE ORDERS WELCOME (Supplier of Fortune 1000 Companies)
Gov't, University, & Approved Corporate P.O.s Welcome
CORPORATE DEPT. (408) 522-8672

NO SURCHARGE FOR listed CREDIT CARDS
All Items are Brand New with Full Factory Warranty.
Tech Support for MAC and IBM Compatibles
Full Installation Center for all our Hard Drives
We Ship World Wide
Dealers Qty Pricing is Available.

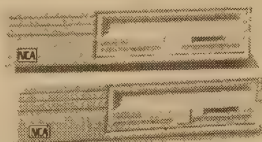


REMOVABLES SUPER SOURCE

REMOVABLES

SyQuest TECHNOLOGY

- ▶ Removable Drive Cartridge, 44MB or 88MB
- ▶ Unlimited Storage
- ▶ 20ms Access speed
- ▶ SCSI Embedded
- ▶ for MAC of IBM
- ▶ 2 Year Warranty



BARE SYQUEST DRIVES

CAPACITY	MODEL	SPEED	INT.	EXT. W/CART
44MB	SQ555	20MS	\$289	\$429
88MB	SQ5110	20MS	\$359	\$529

INTERNAL KITS

COMPLETE FOR IBM COMPATIBLES

INCLUDED: Internal Syquest Drive, Cartridge, Controller, Cables, and Formatting Software for MAC

INTERNAL 8-BIT KITS

CAPACITY	MODEL	SPEED	8-BIT INT. KIT
44MB	SQ555 KIT	20MS	\$399
88MB	SQ5110 KIT	20ms	\$499

INTERNAL 16-BIT KITS

CAPACITY	MODEL	SPEED	16-BIT INT. KIT
44MB	SQ555 KIT	20MS	\$499
88MB	SQ5110 KIT	20ms	\$599

8bit CONTROLLER & SOFTWARE \$59

EXTERNAL KITS

INCLUDED: External Syquest Drive, Cartridge, Controller, Cables, Formatting Software for MAC

EXTERNAL 8-BIT KITS

CAPACITY	MODEL	SPEED	8-BIT EXT. KIT
44MB	EXTSQ555 KIT	20MS	\$489
88MB	EXTSQ5110 KIT	20ms	\$589

EXTERNAL 16-BIT KITS

CAPACITY	MODEL	SPEED	16-BIT EXT. KIT
44MB	EXTSQ555 KIT	20MS	\$589
88MB	EXTSQ5110 KIT	20ms	\$689



CARTRIDGES



SYQUEST CARTRIDGES

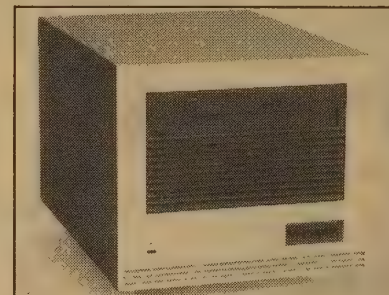
CAPACITY	SINGLE	5-PACK
44MB	\$67	\$320
88MB	\$99	\$489

OPTICALS

Multifunction Magento-Optical Disk Drive for 1-Gbyte and 650-Mbyte Rewritable and WORM Disk Cartridges, With up to 4-Mbytes Read/Write cache

Maxxoptix™

- ▶ Unlimited Data Storage
- ▶ External SCSI Subsystem
- ▶ One year factory warranty
- ▶ 25-Year life of Glass Media
- ▶ Embedded SCSI/SCSI-2
- ▶ Data Transfer of up to 13.2Mbit/Sec.
- ▶ Ultimate Back-up for NOVEL (Ready-to-Boot Backup)



TAHITI IIM - Multifunction

- ▶ 1MB Read/Write Cache
- ▶ External SCSI
- ▶ 35ms

\$2799

TAHITI IIM - Multifunction

- ▶ 4MB Read/Write Cache
- ▶ External SCSI
- ▶ 35ms

\$2999

1GB Cartridge Glass/Poly \$199

RICOH

128Mbyte, 3.5" Rewritable Optical Disk Drive

- ▶ SCSI Optical
- ▶ 35ms Access Time
- ▶ 3.5" Media 128Mbyte
- ▶ for MAC or IBM

INTERNAL

\$1049

EXT. W/CART.

\$1199

HYPERSPACE

- ▶ 5.25" Optical Cart.
- ▶ 650 Mbyte Rewritable
- ▶ 3600 RPM
- ▶ SCSI Optical

INTERNAL

\$2349

EXTERNAL (no cart.)

\$2549

RICOH OPTICAL CARTRIDGES

CAPACITY	SINGLE	5-PACK
128MB	\$49	\$239
128-Optical Lens Cleaner	\$29	\$139
650MB	\$145	\$699

FUJITSU

128Mbyte, 3.5" Rewritable Optical Disk Drive

- ▶ M2511A
- ▶ SCSI 3.5"X1"
- ▶ Fits in floppy slot
- ▶ 30ms Speed

\$1099

REWritable OPTICAL CARTRIDGES

CAPACITY	SINGLE	5-PACK
128MB	\$49	\$239
128-Optical Lens Cleaner	\$29	\$139

COREL SCSI SOFTWARE KIT

- ▶ 8 BIT SCSI CARD
- ▶ COREL SCSI DRIVERS
- ▶ COREL SCSI UTILITIES
- ▶ COREL CD-AUDIO for WINDOWS
- ▶ COREL TAPE BACKUP
- ▶ SITBACK SOFTWARE
- ▶ SCSI TOOLS for WINDOWS

\$99



the NEW NCA BUILDING Corner of LAWRENCE EXPWY & KIFER RD

Awesome Value, Awesome Service

PURCHASE ORDERS WELCOME (Supplier of Fortune 1000 Companies)
Gov't, University, & Approved Corporate P.O.s Welcome

CORPORATE DEPT. (408) 522-8672

Mon-Fri 9-7; Sat 10-6; Sun 10-4.

1202 Kifer Rd. Sunnyvale, CA 94086
(408) 739-9010

NO SURCHARGE FOR listed CREDIT CARDS
All Items are Brand New with Full Factory Warranty.
Tech Support for MAC and IBM Compatibles
Full Installation Center for all our Hard Drives.
We Ship World Wide
Dealers Qty Pricing is Available.



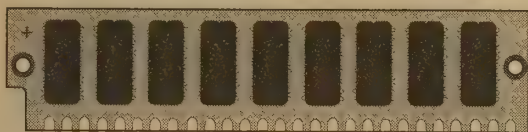
NCA
PERIPHERALS

CORPORATE, Gov't, & Univ. Accts. Dealers Accts. FAX for P.O.s
408 522-8672 408 522-8673 408 739-2420

MEMORY SUPER SOURCE

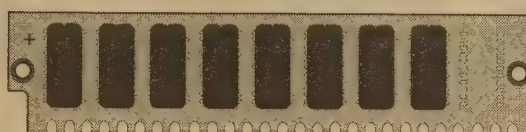
MEMORY SIMMS

IBM COMPATIBLE



256X9	80ns	3Chip	\$12 ⁹⁹
1MBX9	80ns	3Chip	\$29 ⁹⁹
1MBX9	80ns	9Chip	\$32 ⁹⁹
1MBX9	70ns	3Chip	\$31 ⁹⁹
1MBX9	70ns	9Chip	\$34 ⁹⁹
1MBX9	60ns	3Chip	\$34 ⁹⁹
1MBX9	60ns	9Chip	\$37 ⁹⁹
4MBX9	80ns	9Chip	\$119 ⁹⁹
4MBX9	70ns	9Chip	\$129 ⁹⁹
4MBX9	60ns	9Chip	\$139 ⁹⁹
16MBX9	70ns	9Chip	\$659 ⁹⁹

Macintosh



1MBX8	80ns	2Chip	\$26 ⁹⁹
1MBX8	80ns	8Chip	\$30 ⁹⁹
1MBX8	70ns	2Chip	\$29 ⁹⁹
1MBX8	70ns	8Chip	\$32 ⁹⁹
2MBX8	80ns	2Chip	\$69 ⁹⁹
4MBX8	80ns	8Chip	\$114 ⁹⁹
4MBX8	70ns	8Chip	\$119 ⁹⁹
4MBX8	60ns	8Chip	\$135 ⁹⁹
4MBX8	80ns	11-FX	\$139 ⁹⁹
16MBX8	70ns	8Chip	\$629 ⁹⁹

MATH CO-PROCESSORS

intel®



80287 ALL SPEEDS	\$65
80387SX-ALL SPEEDS	\$79
80387DX-16, 20, 25, 33	\$79

Cyrix
ADVANCING THE STANDARDS

2C87-8, 10, 12	\$59
2C87-20	\$67
3C87SX-16, 20, 25	\$69
3C87SX-33	\$79
3C87-20, 25, 33	\$79
3C87-40	\$89

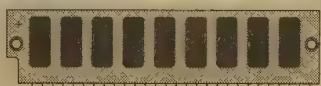
IIT INTEGRATED
INFORMATION
TECHNOLOGY

83S87SX-16, 20, 25	\$69
83S87SX-33	\$79
83D87-16, 20, 25, 33	\$79
83D87-40	\$89

WEITEK

4167-25	\$359
4167-33	\$629

MEMORY SIPPS



1X9/70	\$38.99
1X9/60	\$44.99

72-PIN SIMMS

2MB 604-70ns	\$89
4MB 1X36-70ns	\$179
8MB 2X36-70ns	\$289
16MB 4X36 70ns	\$629

CACHE MEMORY

32X8-25	\$6.50
32X8-20	\$8.50
32X8-15	\$17.00
32X8-12	\$39.00
64X4-25	\$8.50
64X4-20	\$9.00
64X4-15	\$18.00
64X1-20	\$5.75
64X1-15	\$6.75
8X8-25	\$3.75
8X8-20	\$3.25
8X8-15	\$4.75
16X4-20	\$6.25
16X4-25	\$4.75
16X4-15	\$8.25
128X8-25	\$41.50
128X8-20	\$CALL
128X8-15	\$CALL

DIPPS

256X1 100ns	\$2.09
256X1 80ns	\$2.39
256X4 70ns	\$5.45
64X4 100ns	\$3.39
64X4 80ns	\$3.79
1X4 80ns	\$17.99
1MBX1 100ns	\$3.90
1MBX1 80ns	\$4.45
1MBX1 70ns	\$4.65
1MBX1 60ns	\$4.95

MOTHERBOARDS

High Quality, High performance

386SX-25MHz	\$109
386SX-33MHz	\$119
386DX-40MHz w/CPU, 64K Cache	\$189
w/CPU, 128K Cache	\$199
w/CPU, 256K Cache	\$209
486SX-25MHz	\$239
486DX-33MHz, w/CPU, 256K Cache	\$499
486DX-50MHz, w/CPU, 256K Cache	\$699
486DX-33 VESA Local Bus, 128K Cache	\$529
486DX-50 VESA Local Bus, 256K Cache	\$739
486DX2/66 VESA Local Bus, 256K Cache	\$799

INTEL CPUs

486DX-33MHz	\$339
486DX-50MHz	\$499
486DX/2-50MHz	\$459
486DX/2-66MHz	\$599

the NEW NCA BUILDING Corner of LAWRENCE EXPWY & KIFER RD



NCA
PERIPHERALS

Awesome Value, Awesome Service

Mon-Fri 9-7; Sat 10-6; Sun 10-4.

1202 Kifer Rd. Sunnyvale, CA 94086
(408) 739-9010

CORPORATE Gov't. & Univ. Accts

Dealers Accts

FAX for POS

408 522-8672 408 522-8673 408 739-2420

PURCHASE ORDERS WELCOME (Supplier of Fortune 1000 Companies)
Gov't, University, & Approved Corporate P.O.'s Welcome
CORPORATE DEPT. (408) 522-8672

NO SURCHARGE FOR listed CREDIT CARDS
All Items are Brand New with Full Factory Warranty.
Tech Support for MAC and IBM Compatibles.
Full Installation Center for all our Hard Drives.
We Ship World-Wide
Dealership City, Franchise is America



ACCESSORIES SUPER SOURCE

FLOPPY DRIVES

TEAC



FLOPPY DRIVES

DRIVE FORMAT	PRICE
1.2MB	\$57
1.44MB with 5.25" Kit	\$55
1.2/1.44MB DUAL Floppy	\$149

EPSON

FLOPPY DRIVES

DRIVE FORMAT	PRICE
1.2MB	\$52
1.44MB With 5.25" Kit	\$49

KEYBOARDS

KEYBOARDS

DESCRIPTION	PRICE
MITSUMI High Quality Keyboard	\$29.99
MITSUMI BLACK	\$49.99
MAX STANDARD 101 KEY	\$22.99
ALPS SWITCH CLICK STYLE	\$39.99

FOCUS

DESCRIPTION	PRICE
FOCUS 2001 W/COVER	\$42.99
FOCUS 5001 with Calculator	\$59.99
FOCUS 9000 with Calculator	\$99.99

POINTING DEVICES



Highest Quality Pointing Devices

NAME	PRICE
FIRST-MOUSE	\$36.95
MOUSE-MAN	\$59.99
TRACK-II trackman II	\$84.95
SCANMAN-256/OCR*	\$329.95

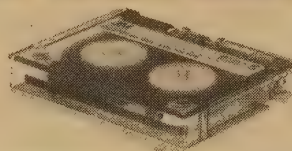
FAX/FAX-MODEMS

USRobotics

The Intelligent Choice in Data Communications

DESCRIPTION	PRICE
USR-S96001-FAX Sportster Internal Fax Modem	\$289
USR-S9600E-FAX Sportster External Fax Modem	\$319
USR-S144001-FAX Sportster Internal Fax Modem	\$309
USR-S14400E-FAX Sportster External Fax Modem	\$339

MEDIA



TAPES & CARTRIDGES

DESCRIPTION	SINGLE	5-PACK
120/250MB QD2120	\$18.95	\$90.99
120/250MB FORMATTED	\$25.95	\$120.00
150MB 1/4" TAPE 6150	\$22.95	\$107.50
250MB 1/4" TAPE 6250	\$28.95	\$137.50
525MB 1/4" TAPE 6525	\$33.95	\$155.00
2.0GB 4mm DAT TAPE 90M	\$19.95	\$85.00
4mm CLEANING TAPE	\$19.95	\$85.00
2.0-5.0GB EXABYTE	\$17.95	\$79.95
128 OPTICAL RICOH	\$49.00	\$239.00
128 OPTICAL LENS CLEANER	\$29.00	\$139.00
650MB RICOH CART. OPTICAL	\$145.00	\$699.99
1.0GB GLASS OPTICAL CART.	\$199.00	\$979.00
44MB SYQUEST CART.	\$67.00	\$320.00
88MB SYQUEST CART.	\$99.00	\$489.00

CABLES

EXTERNAL CABLES

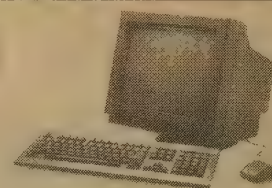
DESCRIPTION	PRICE
CENTRONICS TO SCSI-II	\$39.99
CENTRONICS TO MAC 25-PIN	\$7.99
CENTRONICS 50 TO CENTRONICS 50, 6FT	\$12.99
CENTRONICS 50 TO CENTRONICS 50, 3FT	\$9.99
CENTRONICS TO DB-50	\$39.99
DB-50 TO SCSI-II	\$39.99
DB-50 TO DB-50	\$39.99
SCSI-II TO SCSI-II	\$39.99

INTERNAL CABLES

DESCRIPTION	PRICE
40 PIN IDE, 3 CONNECTORS	\$3.99
50 PIN SCSI, 4 CONNECTORS	\$9.99
50 PIN SCSI, 3 CONNECTORS	\$5.99
FLOPPY & IDE CABLE SET	\$5.99

MONITORS

MONITORS



DESCRIPTION	PRICE
PAPER-WHITE VGA 14"	\$109
SVGA INTERLACED 14" .28DPI	\$279
SVGA NON-INTERLACED 14" .28DPI	\$319
SVGA BLACK 14" 1024X768 .28	\$299
SVGA NON-INTERLACED 15" 1280X1024	\$429
SVGA NON-INTERLACED 17" 1280X1024	\$799

VIDEO CARDS

SVGA CARD WITH 512K	\$44.99
SVGA CARD WITH 1024K	\$59.95
DIAMOND STEALTH WITH 1MB RAM	\$239.99
DIAMOND SPEEDSTAR 24X WITH 1 MB	\$179.99

CASES

- ▶ HIGH QUALITY CASES
- ▶ UL APPROVED POWER SUPPLY
- ▶ GREAT STYLE SELECTION



BETA SERIES™

DESCRIPTION	PRICE
MINI-TOWER P-105, 230W	\$69.99
MED-TOWER P-203, 230W	\$99.99
FULL-TOWER P-306, 250W	\$119.99

SYNERGY™

DESCRIPTION	PRICE
MINI-TOWER 16-705	\$69.99
MED-TOWER 16-400	\$99.99
FULL-TOWER 32-380	\$119.99
FULL-TOWER W/DOOR 32-190	\$129.99

EVER™ SERIES

DESCRIPTION	PRICE
MINI-TOWER EC373	\$84.99
MED-TOWER 200W, W/DOOR EC467	\$119.99
FULL-TOWER EC662	\$139.99

EVER™ BLACK SERIES

DESCRIPTION	PRICE
MED-TOWER BLACK 200W	\$109.99
FULL-TOWER BLACK	\$149.99

the NEW NCA BUILDING - Corner of LAWRENCE EXPWY & KIFER RD

Awesome Value, Awesome Service

PURCHASE ORDERS WELCOME (Supplier of Fortune 1000 Companies)
Gov't, University, & Approved Corporate P.O.s Welcome
CORPORATE DEPT. (408) 522-8672

Mon-Fri 9-7; Sat 10-6; Sun 10-4.

1202 Kifer Rd. Sunnyvale, CA 94086
(408) 739-9010

CORPORATE Gov't. & Univ. Accts. Dealers Accts. FAX for P.O.'S
408 522-8672 408 522-8673 408 739-2420

NO SURCHARGE FOR listed CREDIT CARDS
All Items are Brand New with Full Factory Warranty.
Tech Support for MAC and IBM Compatibles
Full Installation Center for all our Hard Drives.
We Ship World Wide.
Dealers Qty Pricing is Available.



Prices and Availability are subject to change. All logos are property of their respective companies.

New Product Reviews

GAMES

By Mike Markowitz

WAXWORKS

Designed By: HorrorSoft (UK): Mike Woodroffe, Alan Bridgeman, and Simon Woodroffe

Published By: Accolade

For: MS-DOS (640K, 16MHz 386SX or faster processor, EGA or VGA graphics, mouse recommended, popular audio cards supported)

List Price: \$59.95

Uncle Boris has just died, leaving you his WaxWorks, a creepy Victorian mansion filled with his collection of wax monsters, criminals, witches, and ungrateful Undead. Your mission is to plunge into the alternate realities concealed in the WaxWorks in search of your twin brother, who was lost in a cave years ago.

To complete the game, you have to explore the WaxWorks and then survive and master four "quests": rescue a princess trapped inside the Great Pyramid, track down Jack the Ripper in nineteenth-century London, descend into an iron mine to destroy a man-eating mutant

plant, and finally, enter a graveyard to defeat an evil Necromancer and his hordes of zombies.

The program was developed by HorrorSoft, the same British team that designed the Elvira games for Accolade. If you liked those, you'll love this one. The box carries a titillating cautionary label: PARENTAL WARNING: INTENSE GRAPHIC VIOLENCE. If you can wade through all the gore and slime, there are endless hours of intricate puzzles and challenging obstacles to overcome.

WaxWorks is installed from compressed files on four high-density 5.25" disks. After installation it requires almost 10MB of disk space.

The screen consists of a central window showing an "in-your-face" first-person view of the action, an inventory window showing the objects you have collected, and various controls and status indicators around the edges.

Waxworks is technically impressive, but definitely not for the squeamish. (Accolade, 5300 Stevens Creek Blvd., San Jose, CA 95129.

Continued

PRODUCT UPDATES

- **Ares** released **FontMonger 1.5**, a new version of its font conversion and modification utility for the Macintosh. Existing owners can upgrade to v1.5 for \$49.95. Ares Software Corp., 561 Pilgrim Dr., Suite D, Foster City, CA 94404. (415)578-9090.
- **Attain** released **In Control v2.0**, its To-Do List Manager for Macintosh computers. Bundled with In Control is a free copy of DynoPage Lite, a printing utility from Portfolio Software that lets users preview printed pages on screen and print pages for Day Timer, Day Runner, Filofax, Franklin, and other popular planners. Attain Corp., 48 Grove St., Sumerville, MA 02144. (617)776-1110.
- **ColorAge** released **Freedom of Press for Windows**. The new version will enable users to print high-quality PostScript fonts and graphics and allow users to convert PostScript files to DCX and PCX formats for higher-quality output from fax applications. ColorAge, Inc., 900 Technology Park Dr., Billerica, MA 01821. (508)667-8585.
- **Dantz Development** announced v2.0 of their Macintosh backup programs, **Retrospect** and **Retrospect Remote**. Highlights include an all-new interface, improved performance, and additional capabilities. Dantz Development Corp., 1400 Shattuck Ave., Berkeley, CA 94709. (510)849-0293. AppleLink: DANTZ.
- **Lotus** is shipping **cc:Mail Remote for Macintosh v2.0**. The new version allows remote users of Apple PowerBook computers or other standalone Macintosh computers to easily communicate with cc:Mail users operating Macintosh, MS-DOS, Windows, OS/2, UNIX, or any combination of these platforms. Lotus Development Corp., 55 Cambridge Pkwy., Cambridge, MA 02142. (617)577-8500.
- **NEC** announced it would include a **free three-year, on-site parts and labor limited warranty** on all Silentwriter laser printers and genuine NEC printer options, excluding replacement consumables, purchased January 1, 1993, through March 31, 1993. NEC Technologies, Inc., 1414 Massachusetts Ave., Boxborough, MA 01719-2298. (508)264-8000.
- **SPSS/PC+ 5.0** is shipping. The new version of this statistical package for DOS offers extended memory, dramatically improved performance, and close links to a new analytical and business charting module, SPSS/PC+ Graphics from TriMetrix. SPSS, Inc., 444 N. Michigan Ave., Chicago, IL 60611-3962. 1-800-543-2185.
- **Triangle Software**, a division of Datawatch Corp., announced **Virex for the PC v2.3**. Version 2.3 offers over five hundred new explicit virus detectors and includes the ability to send virus alerts to Novell NetWare consoles. Datawatch Corp., 3700-B Lyckan Pkwy., Durham, NC 27707. (919)490-1277.

Graphics and
Animation: 7
Sound: 8
User Interface: 8
Overall Value: 5

PRODUCT SPOTLIGHT

408/985-1700)

READING ADVENTURES IN OZ

Designed By: Leslie House

Published By: Davidson

For: MS-DOS (640K, 12MHz or faster CPU, VGA graphics and mouse required, popular audio cards supported)

List Price: \$59.95 (school lab packs and site licenses also available)

The movie *Wizard of Oz* ruined a great classic of children's literature for an entire

generation of Americans. Between 1900 and 1919, L. Frank Baum wrote sixteen books about Dorothy's adventures in the imaginary land of Oz. Thanks to Hollywood, all we ever learned about it was reduced to one screenplay.

Reading Adventures in Oz is a daring attempt to update and revisit this lost (and public domain) classic, in the form of a learning program for kids from preschool to third grade (ages 4-9). The software is designed to build a variety of reading and problem-solving skills: letter and word recognition, phonics, categorization, rhyming, inference, synonyms, and comprehension.

The theory underlying the design of the program is that children learn to understand and use words by experiencing language in a meaningful context. This is what happens when grownups read

aloud to kids. As they listen to the story and interact with the storyteller, they learn how words relate to each other.

The program is built around forty detailed and imaginative screens in 256-color VGA. All the screens are tied together by—what else?—the Yellow Brick Road. Click the road near the top of the screen and you go forward; click the road near the bottom of the screen and you go back. In preliminary testing, the design team found that kids spent a lot of time exploring each screen, so there are plenty of hidden objects, sounds, and little animations to discover.

To play, you first select one of four characters: Dorothy, the Scarecrow, the Tin Boy, or the Cowardly Lion. Based on feedback from kids in preliminary testing, the characters were redrawn for greater appeal: Dorothy wears a more contemporary outfit and the Lion is a cub. Your objectives are still the same: Dorothy wants to go home, the Lion needs courage, Tin Boy needs a heart, and Scarecrow needs a brain.

Before the Wizard will grant your wish, you need to find certain things. The clues may be given in the form of rhymes and riddles. When you click on an object, its name appears in a box. You can drag the word into a bag that accompanies you on every screen. If the word matches your current task, it stays in the bag, otherwise it just drifts back to its original place.

You can play the game at three different skill levels. Level 1 is for pre-readers (typically ages 4-5). You can simply explore the screens, learning to associate words with pictures, and discovering hidden objects. At Level 2 (ages 6-7) early readers are exposed to word recognition, rhyming words, categorization, number and shape recognition. At Level 3 (ages 8-9) experienced readers get to use context to construct meaning, make inferences, draw conclusions, and follow written directions.

The program is installed from compressed files on 1.2MB 5.25" or 720K 3.5" disks. After installation it takes up an impressive 6MB of hard disk space. The 32-page manual is illustrated with line drawings and screen shots, and includes a complete list of the four

hundred vocabulary items in the program.

Reading Adventures in Oz is a charming, attractive, and well-designed program. You really need an audio card to get the most out of it. (Davidson, Inc., PO Box 2961, Torrance, CA 90509. 310/793-0600)

MARIO IS MISSING!

Designed By: Jon Mandel

Programmed By: Jeff Chasen, Software Toolworks

Published By: Mindscape

For: MS-DOS (640K, 12MHz or faster CPU, VGA or Super VGA graphics, mouse recommended, supports most popular audio cards)

List Price: \$59.95

The Mario Brothers are Nintendo's loveable little video game superstars, who have racked up forty million copies shipped and over \$300 million in sales since 1985. Two-thirds of all American children between the ages of 9 and 12 are familiar with the Mario Brothers; which is better name recognition than George Bush or Bill Clinton could manage in this hard-to-please market.

Over a year ago, Nintendo reached an agreement allowing Software Toolworks to develop "edutainment" software based on the Mario Brothers characters. The first product of this alliance has now arrived: Mario Is Missing!

Your mission is to thwart the evil Bowser's horde of turtles, who have kidnapped Mario and now are stealing historic artifacts from the world's great cities (Can you say "Carmen Sandiego"?). By picking an unmarked door in Bowser's castle, you are teleported to one of twenty-five cities. You have to recover the lost items and return them to their rightful places. Complete enough missions and you can rescue Mario. You have a cellular phone to contact helpers, and a computer to store the information you collect. Keep a pencil and paper handy to record those all-important phone numbers!

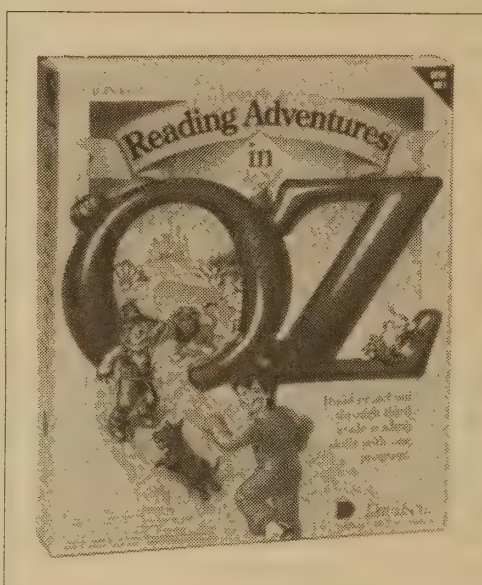
You can also pick up locator beacons that help you track down the bad guys, and taxi tokens that allow you to get around town more quickly. You can also call up a very attractive world map that lets you zoom in on continents and regions. The package includes a colorful fold-out version of this map, with the game instructions printed on the back.

The city maps are limited to four or five locations, but they are in the right positions. For San Francisco, the missing items were the foghorn from the Golden Gate Bridge, a striped prison shirt from Alcatraz, the bell

from a cable car, and the tip of the Transamerica Pyramid. Don't go out to Alcatraz without an extra taxi token, or

Graphics and Animation: 9
Sound: 7
User Interface: 7
Overall Value: 7

Continued



Graphics and Animation: 9
Sound: 9
User Interface: 9
Overall Value: 9

DISCOVER THE CUPERTINO COMPUTERS DIFFERENCE!

LARRY WOOD - OWNER

386DX-40C64	\$389	1 YEAR PARTS, 3 YEAR LABOR
486DLC-33C64	489	WARRANTY ON ALL SYSTEMS
486DX-33C64	669	MON-FRI 10:00-6:00
486DX-50C64	869	SATURDAY 11:00-4:00
486DX2-66C64	959	SALE PRICES FOR CASH CUSTOMERS
486DX-50 VESA LB	999	NO CREDIT CARDS
		Corporate P/O's Welcome
		Prices & availability subject to change w/o notice

STANDARD SYSTEM: Motherboard & CPU, 1 MB RAM, Desktop or Mini-Tower Case, 230 Watt Power Supply, 101 Key Enhanced Keyboard, 2 Hard/2 Floppy Disk 1:1 Controller Card, AMI Bios, 1.2 or 1.44 MB Floppy Drive, 2 Serial/Parallel/Game I/O Ports.

CUPERTINO COMPUTERS Inc.
10675 S. DE ANZA BLVD., CUPERTINO, CA 95014
TEL: (408) 255-5997 FAX: (408) 255-7699

Network Products for Less!

Lan Cards

Ethernet

HTI Coax 16-Bit Ethernet Adapter	125
3COM 3C503-16 ETHERLINK II 16-bit	199
3COM 3C503-16 ETHERLINK II 5 Pack	738
3COM 3C523B ETHERLINK/MC	290
3COM 3C523B ETHERLINK/MC 5 Pack	1,278
3COM 3C507 16-bit ETHERLINK	304
3COM 3C507 5 Pack, (1 Doc/Drivers)	1,347
3COM 3C509 ETHERLINK III 16-bit	145
3COM 3C509 ETHERLINK III 5-Pack	650
INTEL ETHEREXPRESS 16	135
INTEL ETHEREXPRESS 16 MCA	176
INTEL ETHEREXPRESS 16 5 Pack (1 Doc/Drivers)	600
INTEL ETHEREXPRESS 16 20 Pack (1 Doc/Drivers)	2,007
NOVELL/EAGLE NE2000 16-Bit	139
NOVELL/EAGLE NE2/2C 16-bit Micro Channel	253
SMC ETHERCARD ELITE 16 Coax	144
SMC ETHERCARD ELITE 16 Coax 6 Pack	788
SMC ETHERCARD ELITE/A FOR PS/2	221
3COM 3C579 32-bit EISA Coax	299
3COM 3C579 32-bit EISA Coax 5-pack	1,150
ACCTON 32-Bit EISA Coax/10BaseT Combo	450
EXOS/MICRODYNE 32-BIT EISA	625
INTEL ETHEREXPRESS 32-Bit EISA	465
NOVELL/EAGLE NE3200 32-Bit EISA	711
NOVELL/EAGLE NE2/32C 32-Bit MC	543

Token Ring

3COM TOKENLINK III 16/4 ISA	474
3COM TOKENLINK III 16/4 EISA	746
IBM TOKENLINK RING ADAPTER 16/4	615
INTEL TOKENEXPRESS EISA 16/4	698
MADGE SMART RINGNODE Adapter 16/4	621
MADGE TOKEN RINGNODE Adapter 16/4 EISA	850

10 Base-T Twisted Pair Ethernet

HTI 10 Base-T transceiver (AUI to RJ45)	89
ACCTON 10 Base-T transceiver (AUI to RJ45)	100
RACAL 10 Base-T transceiver (AUI to RJ45)	110
HTI 10 Base-T 16-bit Ethernet Adapter	125
3COM 3C503-16TP ETHERLINK II 16 16-bit	209
3COM 3C503-16TP ETHERLINK II 16 5PK	825
3COM 3C507 ETHERLINK 16-bit TP	340
3COM 3C507 ETHERLINK 16-bit TP 5PK	1,394
3COM 3C509-TP ETHERLINK III 16-bit	145
3COM 3C509-TP ETHERLINK III 16-bit 5-pack	650
3COM 3C523B 10 Base-T MC	337
3COM 3C523B 10 Base-T MC 5 Pack	1,517
ACCTON EN1640 ETHERCOMBO 16-Bit	175
INTEL ETHEREXPRESS 16 TP	145
INTEL ETHEREXPRESS 16 TP MCA	186
INTEL ETHEREXPRESS 16 TP 5 Pack	600
SMC ETHERCARD ELITE 16T 10 Base-T	144
SMC ETHERCARD ELITE 16T 10 Base-T 6 Pack	799
SMC ETHERCARD ELITE 16 COMBO	177
SMC ETHERCARD ELITE 16 COMBO 6 Pack	984
3COM 3C579 ETHERLINK III EISA 10BaseT	299
3COM 3C579 ETHERLINK III EISA 10BT 5-pk	1,150

External/Pocket Adapters

DLINK Pocket Ethernet Adapter BNC	250
DLINK Pocket 10 Base-T Adapter	250
HTI Ext. Ethernet Adapter w/ Parallel Port	199
HTI Ext. 10 Base-T Adapter w/ Parallel Port	199
XIRCOM Pocket Arcnet Adapter COAX	267
External Ethernet Adapter	413
External Token Ring Adapter	649
Pocket 16/4 Mbps TR Adapter	615
Pocket Ethernet II BNC	345
Pocket Ethernet Adapter 10 Base-T	378

10 Base-T Concentrators

ASANTE 8-Port Concentrator	299
ASANTE 1012 12-Port Smart Hub	820
ASANTE 1701 Smart Hub 12-port w/SMNP module	966
EAGLE 4-port Hublet Mini-Repeater	228
HTI 12-port 10 Base-T Concentrator	525
EXOS/MICRODYNE 16 port 10 Base-T Concentrator	621
INTEL Int. EtherExpress TPE Hub/ISA (12 ports)	565
INTEL Int. EtherExpress TPE Hub/EISA (12 ports)	641
INTEL Hub Expansion Board (12 add'l ports)	490
INTEL Harmonica for EtherExpress TPE Hub	65

Etherlink III EISA Card



3Com's new 32-bit EISA adapter features the following:

- Parallel Tasking, High Performance
- Software Configurable
- Lifetime Warranty
- Workstation Drivers Included

3C579 Single Coax or 10BaseT\$299

3C579 5-pack Coax or 10BaseT\$1,150

3COM Etherlink III 16-bit Lan Adapters*

3C509 Single Coax or 10 BaseT\$140

3C509 5-pack Coax or 10BaseT\$650

Intel's 32-Bit Server Adapter *

Intel EtherExpress 32-Bit Coax\$465

* PC Editor's Choice, February 9, 1993

Manageable Concentrators

NETWORTH 3-Slot Chassis	615
6-Slot Chassis	802
Host 10BaseT Module	1,234
Smart 10 BaseT Module	1,791
EtherManager Software	1,234
SYNOPTICS 2803 16-Port w/AUI	914
2804 16-Port Concentrator w/FO	1,124
2813-03 10Base-T Conc. w/AUI(Basic)	1,623
2813-04 10Base-T Conc. w/AUI(Adv.)	2,047
2814-03 10Base-T Conc. w/FO (Basic)	1,834
2814-04 10Base-T Conc. w/FO(Adv.)	2,259
Adv. Ethernet/TR Control Console SW	2,621

Repeaters

ACCTON EtherRepeater 2 AUI/2 BNC	685
IMC LANextender BNC/BNC-limited to 1 per lan	325
IMC Dual Port Ethernet Repeater BNC/BNC	492
IMC Quad Port Repeater	600
IMC Multi-Port Repeater Chassis	568
IMC BNC Repeater Card for IMC Multi-Port Repeater	253
IMC 10BT Repeater Card for IMC Multi-Port Repeater	135

Network Printing

CASTELLE JETPRESS BNC/10 Base-T	436
FRESH TECH Printer Assist (Software)	175
INTEL NETPORT II for Ethernet	529
INTEL NETPORT II for 10 Base-T	529
INTEL NETPORT II for Token Ring	760

Uninterruptible Power Supplies

APC250 (200watt UPS for workstations)	140
APC POWERCHUTE PLUS for Novell (VAP/NLM)	99
APC SMART-UPS 400	323
APC SMART-UPS 600	411
APC SMART-UPS 900	650
APC SMART-UPS 1250	844
APC SMART-UPS 2000	1,294

Network Fax

CHEYENNE FaxServe VAP/NLM	679
OPTUS FACSys NetWare Fax Server Software	651
INTEL Satisfaction Modem 200	317
INTEL Net Satisfaction Software	1,040
JETFAX II 9250 w/1 MB	665
JETFAX II 9450 w/4 MB	975

Tape Backup Solutions

QFA-700 W/ CTRL 700 MB	1,100
TJ-10 120MB TRAKKER Parallel Port Tape Drive	395
TJ-20 250MB TRAKKER Parallel Port Tape Drive	479
PT-25 2GB SCSI Tape Drive w/Ctrl	1,110
PT-50 4GB SCSI Tape Drive w/Ctrl	1,725
MOUNTAIN FS1200 2.0GB Int. 4MM, SCSI	2,915
MOUNTAIN FS1200 2.0GB Ext. 4MM, SCSI	3,207

Server Based Tape Backup

ARCHIVE INT. PYTHON 2GB DAT w/VAP	1,980
ARCHIVE EXT. PYTHON 2GB DAT w/VAP	2,106
ARCHIVE INT. PYTHON 2GB DAT w/NLM	2,051
ARCHIVE EXT. PYTHON 2GB DAT w/NLM	2,177
ARCHIVE INT. PYTHON 4 GB DAT w/NLM	2,849
ARCHIVE EXT. PYTHON 4 GB DAT w/NLM	2,975
EXABYTE INT 2.2 GB 8MM w/NLM	2,744
EXABYTE EXT. 2.2 GB 8MM w/NLM	2,870

MacIntosh Products

ASANTE MC+IIE64 Coax/MAC II	158
ASANTE MC+IIE64 10 BaseT/MAC II	158
ASANTE MC+30iE64 Coax/Isi & SE/30	158
ASANTE MC+30iE64 10 BaseT/Isi & SE/30	158
ASANTE EN/SCPB Thick/Thin/10BT for Powerbook	346
ASANTE EN/SC10TPB 10BaseT for Powerbook	283

Cabling Supplies

RG58/RG62 Ratchet BNC Crimper	75
RJ-45 Crimper	75
RG58 Ethernet BNC-Crimp (100 pak)	125
RG62 Arcnet BNC-Crimp (100 pak)	125
RJ45 10 BaseT Connectors (100 pak)	40
AT&T 10Base-T Ethernet Cable (1000' min)	100
BELDEN PVC RG58 or RG62 Cable (1000' min)	175
PLENUM RG58 or RG62 Cable (1000' min)	350

Network Modems

SHIVA NET MODEM/E 9600 BNC	1,502
MICROTEST Ethernet LANModem	1,509
MICROTEST Token Ring LANModem	1,965
U.S. ROBOTICS Modem Sharing Kit V32BIS	635
U.S. ROBOTICS Dual Modem Sharing Kit	1,018
■ Modem Sharing Kits requires non-dedicated workstation	

Disk Sub-Systems for NetWare

Micropolis 675 MB w/ SCSI-2 Host Adapter, Drivers, Enclosure, 17 ms.	1,975
Micropolis 1.0 GB w/SCSI-2 Host Adapter, Drivers, Enclosure 10 ms	2,665
Micropolis 1.3 GB w/ SCSI-2 Host Adapter, Drivers, Enclosure, 14 ms w/ 5 year warranty	2,605
Micropolis 1.3 GB Mirrored w/ SCSI-2 Host Adapter, Drivers, Enclosure, 14 ms w/ 5 year warranty	4,635
Micropolis 1.7GB w/ SCSI-2 Host Adapter, Drivers, Enclosure, 14.5 ms w/up to 5 year warranty	3,198
Micropolis 1.7GB Mirrored w/SCSI-2 Host Adapter, Drivers, Enclosure, 14.5ms w/up to 5 year warranty	5,825

E-Mail w/ cc:Mail

cc:MAIL DOS Platform V4.0	205
OS/2 Platform	344
WINDOWS Platform	344
MacIntosh Platform	344
10 USERS license	240
25 USERS license	587
100 USERS license	2,287

Network Utilities

CHEYENNE Monitrix Network Mgmt	595
Utils for NetWare 286/386	262
ARCserve NLM V4.0 (up to 5 users)	273
ARCserve NLM V4.0 (up to 20 users)	810
ARCserve NLM V4.0 (up to 50 users)	1,018
ARCserve NLM V4.0 (up to 250 users)	1,295
ARCserve Solo	185
DIRECT ACCESS Network Menu	366
FRYE UTILITIES NetWare Management v1.1	324
Early Warning System v1.1	324
Lan Directory v1.1	278
XTREE XTNET Network File Manager	305

Peer-to Peer Networking

Lantastic A/I Software	70
AE-2 Starter Kit	498
AE-3 Starter Kit	579
Novell NetWare Lite 1.1	70
NetWare Lite coax starter kit (2 Stations)	420
NetWare Lite Add-On (1 Additional Station)	210
Windows for Workgroup Software Only	70
Windows for Workgroup Add-On Starter Kit	385
Windows for Workgroup Add-On User Kit	195

- All prices listed are cash prices.
- All orders shipped C.O.D. from So. S.F.
- Fortune 1000 companies and Government P.O. accepted on approved credit. Surcharge will apply.
- 20% restock fee applies to all non-defective returns and refused shipments.

FASTLINK

Network Products

1-800-788-LANS

Inside 415 Area Code (415) 872-1376

- Prices subject to change without notice.
- We are not responsible for typographical errors.
- Shipping & Handling charges will be added to all orders.
- Quantity pricing available for 10 units or more.

FAX: (415) 872-6634

Memory Source International

MSI WILL BEAT ANY ADVERTISED PRICE • LOWEST PRICES • SAME DAY SHIPPING

2471-B Autumnvale Drive, San Jose CA 95131

TEL: (408) 956-9980 Fax: (408) 956-9992

CPU's

80286-10/12/16/20/25	CALL
80386DX-16/20	CALL
80386-25/33	CALL
80386DX-25/33 AMD, C&T	CALL
80386DX-40 AMD	CALL
80486DX-25/33/50	CALL
80486DX-33/25 CYRIX	CALL
80486DX-66	CALL

SIMM MODULES

Add *2 For SIPPS

4Mx9-60ns	\$135
4Mx9-70ns	125
4Mx9-80ns	115
1Mx9-60ns	34
1Mx9-70ns	32
1Mx9-80ns	31
1Mx9-10ns	27
4Mx8-80ns	CALL
256Kx9-10ns	7 ⁰⁰
256Kx9-80ns	9
256Kx9-70ns, 60ns	11 ⁵⁰

ALSO 3 CHIP AVAILABLE

DRAM 256x4

256Kx4-80ns	\$395
256Kx4-70ns	399
256Kx4-60ns	410

DRAM 256x1

256x1-150ns	\$99
256x1-120ns	1 ⁰⁵
256x1-100ns	1 ⁴⁵
256x1-80ns	1 ⁵⁰
256x1-70ns	1 ⁵⁰
256x1-60ns	1 ⁴⁰
256x1 Static RAM Col	CALL
DRAM 64x4	CALL
DRAM 64x1	CALL

MATH CO-PROCESSORS

INTEL	
8087-5, 8 MHz	\$46
80287-6, 8, 10, 12 MHz	65
80387SX-16 MHz	85
80387SX-20 MHz	90
80387DX-25/33 MHz	95
486SX 20,25,33 OVERDRIVE	CALL
487SX 20,25	CALL
CYRIX	
80387DX-16, 20, 25 MHz	\$78
80387DX-33 MHz	90
80387SX-16 MHz	70
80387SX-20 MHz	85
AMD/WEITEK/ULSI	CALL
WEITEK MATH CO 4167-33	CALL
IIT	
8C87-8 MHz	\$55
8C287-10 MHz	65
8C287-12, 20 MHz	70
8C387-20, 25 MHz	80
8C387-33 MHz	89
EPROMS	CALL
1x4- 4x1 STATIC RAM	CALL
LASER PRINTERS MEMORY	CALL
HP PERSONAL SYSTEM	
MEMORY	CALL
CACHE MEMORY	CALL
IBM PS/2 MEMORY	CALL
APPLE MACINTOSH MEMORY	CALL

LAPTOP/NOTEBOOK

ALL BRANDS & MODELS, UPGRADES AVAILABLE, IBM, APPLE, TOSHIBA, AST, ETC. CALL

LASER PRINTERS

ALL BRANDS & MODELS UPGRADES AVAILABLE CALL

HARD DRIVES

CONNER-MAXTOR
WD- QUANTUM, ALL KINDS OF
HD & FDD DRIVES CALL
MOTHERBOARDS, MONITORS, VGA & VIDEO
CARDS, KEYBOARDS CALL
ALL KIND OF PRINTERS CALL
ALL KINDS OF SOCKETS, CABLES, CONNECTORS CALL

HOURS: MON-FRI 8:30AM-6PM SAT 9:30-2

PRICES SUBJECT TO CHANGE W/O NOTICE

PRODUCT SPOTLIGHT

you'll never get back.

Mario Is Missing! is installed from compressed files on five 3.5" disks (four were high-density) and occupies about 6.25MB of hard disk space. There are multiple levels of difficulty. (Software Toolworks Corp., 60 Leveroni Court, Novato, CA 94949. 415/883-3000)

KID CUTS

Programmed By: Ken Bull

Published By: Brøderbund

For: MS-DOS (640K, VGA graphics and mouse, audio card recommended)

List Price: \$59.95 (school edition and lab packs also available)

Kid Cuts is an electronic arts-and-crafts program designed for ages 4-12. You can use a rich set of graphic tools to customize a variety of projects, print them, cut them out, and assemble them. The package even includes safety scissors.

The graphic tools are similar to those in Kid Pix, Brøderbund's very successful paint program released earlier this year. There are "wacky brushes" that create amusing special effects, each accompanied by its own sound. A new tool is the Magic Wand, which can change the facial expression on an animal or doll with a single click. Kid Cuts can "swap" or import Rubber Stamp icons from Kid Pix or Kid Pix Companion, but it is a complete standalone application.

You begin at the Project Picker, where your choices include Animals, Masks, Jigsaw Puzzles, Hats, Paper Dolls (hey, it should be Action Figures for the guys), Puppets, Greeting Cards, Shapes, and Rainy Day (a catch-all category that includes play money, paper airplanes, and other surprises). The base graphics are all professionally drawn, simple, and attractive. The

Graphics and Animation: 9
Sound: 9
User Interface: 9
Overall Value: 9

Jigsaw Puzzle maker can import graphics in .PCX format.

The program is compatible with most popular dot-matrix, ink-jet, and laser printers (including PostScript). Color printing is supported (with a palette of sixteen colors) if you really want to miss out on all the fun and mess of crayons and markers. I also highly recommend a glue stick.

The package includes both 5.25" and 3.5" media. After installation, Kid Cuts takes up 2,977,152 bytes of hard disk space. The 44-page user manual is packed with ideas and suggestions. It also admonishes you to "be a good citizen and recycle your scrap paper."

Kid Cuts gives you a limitless supply of paper tigers. Kid Cuts is a good example of how well-designed software can encourage the innate creativity and imagination that school tries so hard to stifle in kids. (Brøderbund, Inc., 500 Redwood Blvd., PO Box 6121, Novato, CA 94948-6121. 1-800-521-6263)

AMIGA SOFTWARE REVIEWS

CHARTS&GRAPHS

Published By: Technical Resource Systems Laboratory

List Price: \$99.95

Reviewed By: Douglas J. Nakakihara

If you have ever wanted to create a chart using your Amiga, TRSL's Charts&Graphs (C&G) may be for you.

You begin to build charts by entering data in a spreadsheet-like table. You can also import comma-, tab-, or space-delimited data files. Additionally, columns and rows can be transposed and simple arithmetic operations on the columns can be performed. All of these features can be real time-savers.

The chart-type is selected graphically through a requestor containing a small picture of each type of chart. Many variations

Continued* on page 261

HAVE QUESTIONS...CALL THE TECHNICAL EXPERTS

TRY US... WE'RE DIFFERENT



Apple ZENITH IBM COMPAQ Macintosh
EPSON EVEREX TOSHIBA HEWLETT PACKARD ALR

Vertical Integration Specialists

GIGABYTES

Quality Service & Upgrades • On-Site & In-Shop Service

* Registered trademarks are by the respective companies

TEL: (510) 440-8032 FAX: (510) 440-9099



Senior Engineer Scott Said:
Legend 486 Computer System has the
best quality and Value "



Special Offer !!!
Add \$20 for
"Local Bus"
System

Legend



Manufacturer's
Price
High Quality
Approved

SYSTEM	BASIC SYSTEM	486 LOCAL BUS SYSTEM	BASIC SYS 40MB HDD VGA CARD MONITOR	BASIC SYS +80MB HDD +SVGA CARD & MONITOR	BASIC SYS +120MB HDD +SVGA CARD & MONITOR	BASIC SYS +200MB HDD +SVGA CARD & MONITOR
486DX2-66 EISA	939	• 486/DX2/66 Local Bus Motherboard & CPU • 4MB RAM • IDE I/O (2HD/2FD 2S/P/G) • 1.2MB & 1.44 TEAC Floppy Drive • 200MB Hard Drive w/256K Cache (12ms) • SVGA Video Card • 14" SVGA Monitor 1024x768 • Mini Tower w/230W Power Supply & LED • 101 Enhanced Keyboard \$ 1610	1327	1367	1427	1517
486-50/64C EISA	888		1276	1316	1376	1466
486-33/64C EISA	709		1097	1137	1197	1287
486DX2-66 ISA	799		1187	1227	1287	1377
486-50/64C ISA	714		1102	1142	1202	1292
486-50C ISA	669		1057	1097	1157	1247
486-33C ISA	456		844	884	944	1034
486SX-25C ISA	345		733	773	833	923
386-40/64C	315		703	743	803	893
386DX-33	310		698	738	798	888
386SX-33	251	479	639	679	739	829
386SX-25	242	470	630	670	730	820

BASIC SYSTEM CONFIGURATION:

Motherboard + CPU, 1 MB Memory Installed, 1:1 2 HD/2FD Controller, 1.2 MB or 1.44MB Floppy Drive, Internal Clock/Clendar, Enhanced Case with Power Supply, & 101 Enhanced Key Board.

LEGEND SUPER SALE !!!

486DX2-66/486DX-50	486-33/64K	386-40/128K
• High Quality Legend Motherboard • 486CPU/64K Cache • 4MB RAM • IDE I/O (2HD/2FD 2S/P/G) • 1.2MB TEAC Floppy Drive • 1.44MB TEAC Floppy Drive • 200MB Hard Drive w/256K Cache (12ms) • SVGA Video Card • 14" Non-Inter. SVGA Monitor 1024x768 • Super Case W/LED Display & Power Supply • 101 Enhanced Keyboard \$ 1686/1598	• High Quality Legend Motherboard • 486CPU/64K Cache • 4MB RAM • IDE I/O (2HD/2FD 2S/P/G) • 1.2MB TEAC Floppy Drive • 1.44MB TEAC Floppy Drive • 130MB Hard Drive • SVGA Video Card • 14" SVGA Monitor 1024x768 • Mini Tower w/Fan/LED • 230W Power Supply • 101 Enhanced Keyboard \$ 1072	• 386DX-40 CPU/128K cache & Legend Motherboard • 4MB RAM • IDE I/O (2HD/2FD 2S/P/G) • 1.2MB TEAC Floppy Drive • 1.44MB TEAC Floppy Drive • 130MB Hard Drive • SVGA Video Card • 14" SVGA Monitor 1024x768 • Mini-Tower w/Fan/LED • 230W Power Supply • 101 Enhanced Keyboard • Math. Co-processor Socket \$ 968

Urgently Wanted !!!
IBM Compatible
PC Contest
Spring, 93

© All PC system houses: welcome you provide your top quality system to join the contest before
25 Mar. 1993

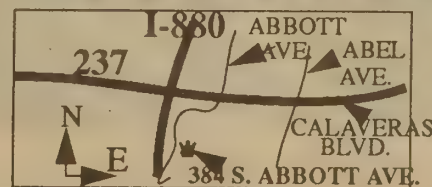
© All systems will be evaluated by state of the art equipments.

© Please call sponsor---
Legend Computer Inc.
for more details



Legend Computer Inc.
384 South Abbott Ave.
Milpitas, CA. 95035
TEL: (408)262-6861
FAX: (408)262-6315

Business Hours:
Mon-FRI 10AM-7PM
SAT 10AM-6PM
SUN 1PM-4PM



* Prices, availability and terms are subject to change without notice
* Not responsible for typos

Power, Performance and to Buy Your Next System

Big Savings

- Motherboard w/ CPU
- 64K Cache
- AMI BIOS
- 4MB of RAMS (70ns) Expandable to 32MB
- Maxtor 130MB IDE Hard Drive (15MS)
- TEAC 1.2 and TEAC 1.44 Floppy Drive
- Impression SVGA Monitor (1024x768)
- Oak Technology SVGA Card w/ 512K
- IDE Controller (2FD/2HD)
- AT I/O Card (2S, 1P, 1G) Ports
- Mini Tower Case w/ 285W Power Supply
- Mitsumi 101 Enhanced Keyboard

* Intel 486DX2-66MHz	\$1588
* Intel 486DX-50MHz	\$1488
* Intel 486DX2-50MHz	\$1388
* Intel 486DX-33MHz	\$1288
* CYRIX 486DLC-33	\$1138

Starter Systems

- Motherboard w/ CPU
- 64K Cache
- AMI BIOS
- 4MB of RAMS (70ns) Expandable to 32MB
- Maxtor 130MB IDE Hard Drive (15MS)
- TEAC 1.2 and TEAC 1.44 Floppy Drive
- Impression SVGA Monitor (1024x768)
- OAK Technology SVGA Card w/ 512K
- IDE Controller (2HD/2FD)
- AT I/O Card (2S, 1P, 1G) Ports
- Mini Tower Case w/ 285W Power Supply
- Mitsumi 101 Enhanced Keyboard

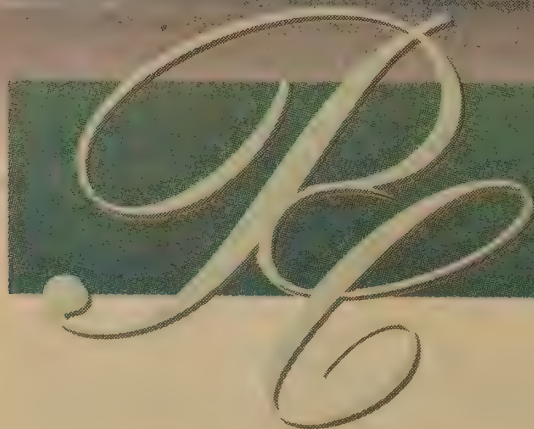
* Intel 486SX-25MHz	\$1129
* Intel 486SX-20MHz	\$1089
* AMD 386DX-40MHz	\$999
* Intel 386DX-33MHz	\$993

PRESTIGE



COMPUTER

PRESTIGE COMPUTER



Prestige Computer Inc.

408-249-3398 Fax: (408) 249-3392

3248 Stevens Creek Blvd., San Jose, CA 95117

Hours: Monday-Saturday 9:00am-7:00pm; Closed Sunday

Price Aren't the Only Reasons from Prestige Computer

Serving The Bay Area Since 1986



VESA Local Bus System

- Intel CPU
- VESA Local Bus Motherboard
- 128K Cache
- AMI BIOS
- Genoa VESA Local Bus SVGA Card w/ 1MB
- VESA Local Bus IDE Controller Card 2HD/2FD
- Maxtor 213MB IDE Hard Drive (13MS)
- TEAC 1.2 and TEAC 1.44 Floppy Drive
- 4MB of RAMS (70ns) Expandable to 32MB
- Impression SVGA Non-Interlaced Monitor (1024x768 .28DP)
- Medium Tower Case w/ 230W Power Supply
- Mitsumi 101 Enhanced Keyboard
- AT I/O Card (2S, 1G) Ports
- MS DOS 5.0 Package
- MS Windows 5.1 Package
- 3 Button High Resolution Serial Mouse and Pad

* Intel 486DX-33MHz \$1860
* Intel 486DX-50MHZ \$2050

Hard Drives

40MB/60MB	\$152/178
85MB/105MB	\$198/228
120MB/130MB	\$255/268
213MB IDE/SCSI	\$378/448
340MB IDE/SCSI	\$608/698
760MB ESDI/SCSI	\$1245

Monitors

Amber 12"/14"	\$80/99
IBM PS/1 8512 VGA	\$209
Impression (1024x768 .39DP)	\$220

Impression/SOCOS (1024x768 .28DP)	\$260
Impression/SOCOS Non-Interlaced (1024x768 .28DP)	\$295
ViewSonic 6E/5+/6ES/7/8	\$338/495/628/1055/1638

Sony HG 1304/1604	\$555/989
NEC 3FGX/4FG/5FG	\$636/736/1330

Video Cards

OAK 256K/512K VGA	\$28/38
Trident 512K/1MB VGA	\$40/60
Diamond Hi-Color/24X/Stealth V-RAM/VL Bus with S3	\$133/158/189/189

Orchid Sierra/Fahrenheit	\$130/189
Tseng Lab 1MB/VL Bus	\$88/138
Genoa VL Bus w/ 1MB	\$138

Accessories

2400 Baud Modem	\$35
Fax Modem (9600/2400)	\$79
Colorado Tape Back-Up 120MB/250MB	\$188/233
Summit Tape Back-Up 250MB	\$220
Archive Tape BackUp 250MB	\$199

Call for Unlisted Component

Warranty

- 1 Year Parts
- Lifetime Phone Support
- 30 Days DOA Exchange
- If system seal is tampered, Prestige Computer Inc. reserves the right to cancel system warranty at its sole option

Services

- Free On-Line Tech Services
- 72 Hours QA and QC Burn in
- Ship Within 48 hours (Unless specified)

- No surcharge for credit cards
- 2% Discount for cash purchase

Quality

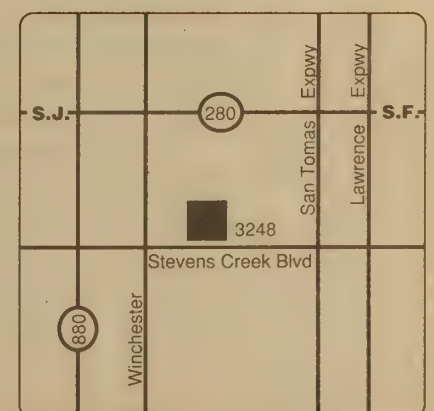
- Qualified Engineers
- Knowledgeable Staffs
- Reliable Parts (Tested)
- TEAC, Maxtor, NEC, Sony, ViewSonic, OMNI, Orchid, Diamond, Genoa and Many More

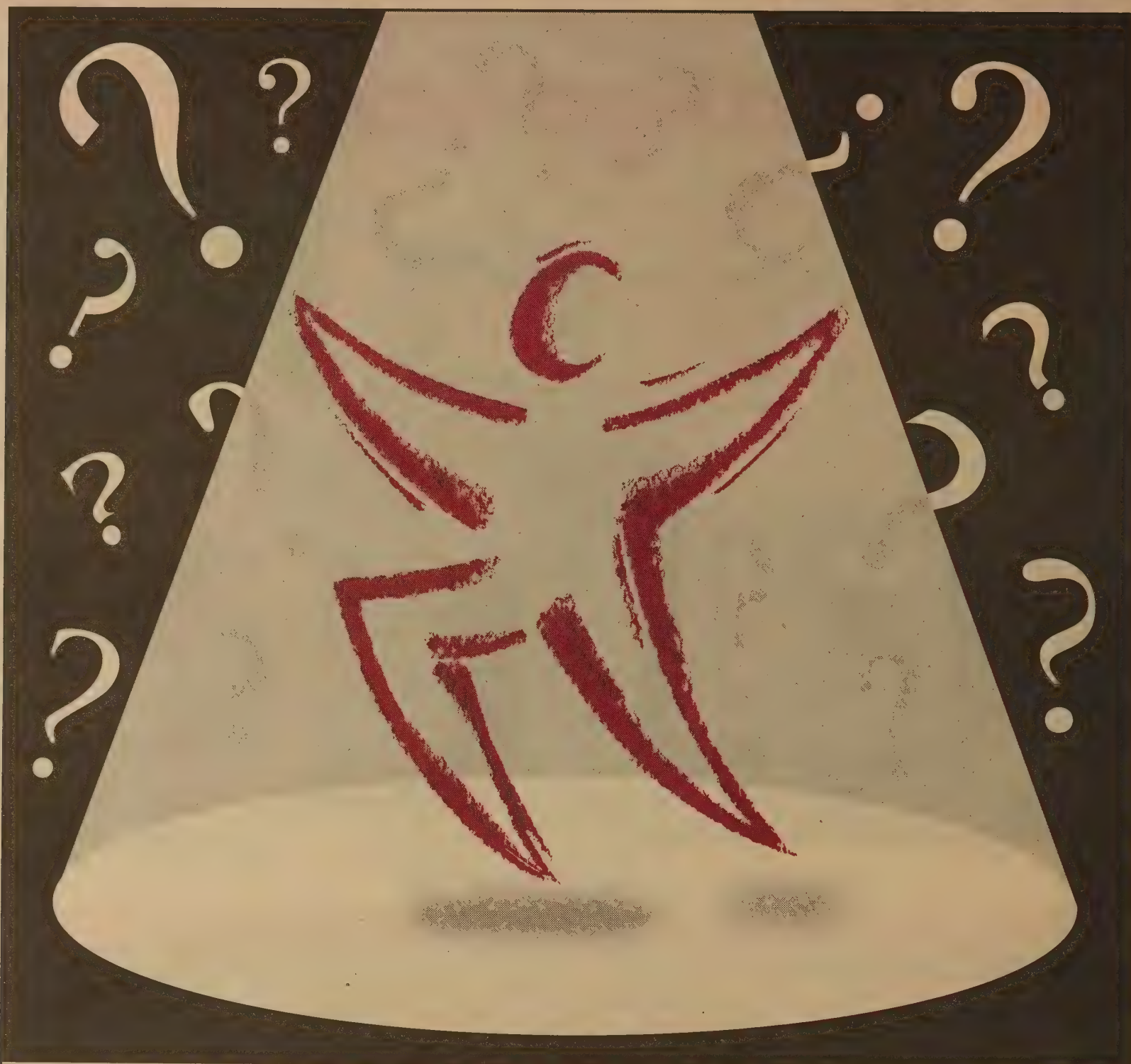
Guarantee

- Customer Satisfaction is our one and only goal!

Terms:

- Freight charge are not refundable
- Damaged shipment is the carrier's responsibility
- Return items must have a RMA# - please call 408-249-3398
- All specifications & prices are subject to change w/o notice
- Dealer inquiries & government POs are welcome
- Credit terms are subject to approval





Jump into the light at **ATXPO⁹³**

A NEW WAY OF LOOKING AT DOCUMENT CREATION, PRINTING AND COMMUNICATIONS

If you're looking for all the right answers to your tough desktop publishing and document communications questions, **ATXPO⁹³** is the perfect place to shed a whole new light on the subject. ATX's first annual conference and exhibition brings together the leading vendors, powerful technologies and valuable educational and informational tutorials and conference sessions.

Choose from 10 information-packed full-day tutorials and over 25 conference sessions. ATX has assem-

bled an outstanding group of industry experts to present the tutorial and conference programs that will answer your most important questions.

ATXPO⁹³ is the only exhibition of its kind, focusing exclusively on all of Adobe's document creation, printing and communication technologies and products.



Advances in document creation, printing and communications

ATXPO⁹³

February 16-19, 1993

Santa Clara Convention Center
Call today for your free program
and registration materials.

1-800-446-5622 ext. 22

©1993 Adobe Technology Exchange • 5201 Great America Parkway, Suite 360, Santa Clara California 95054 • FAX 408-562-6381

RESOURCES

Calendar Of Events

CONFERENCES, SHOWS, AND OTHER SPECIAL EVENTS

FEBRUARY

February 14 The Computer Show & Sale. Marin Civic Center. MarketPro. Call: (415)388-8893.

February 16-18 mobile93 Conference & Exposition. San Jose. Technologic Partners. Call: 1-800-326-3613.

February 20 Computer Show & Sale. Oakland Coliseum. Richard James. Call: 1-800-533-7220.

February 20 The Computer Show & Sale. Solano Co. Fairgrounds. MarketPro. Call: (415)388-8893.

February 21 The Computer Show & Sale. Centennial Hall, Hayward. MarketPro. Call: (415)388-8893.

February 22-26 Compcon Spring '93 Conference. San Francisco. IEEE. Call: (510)423-3490. Email: compcon93@lbl.gov.

February 22-26 Software Development 1993 Conference & Exhibition. Santa Clara. Miller Freeman. Call: (214)245-6012.

February 24 Programming Windows Presentation By Charles Petzold. San Jose. Computer Literacy Bookshops. Call: (408)435-1118.

February 27 Computer Show & Sale. Cow Palace. Richard James. Call: 1-800-533-7220.

February 28 The Computer Show & Sale. Scottish Rite Center, Sacramento. MarketPro. Call: (415)388-8893.

MARCH

March 1-3 Second Annual Windows Hardware Engineering Conference. San Jose. Microsoft. Call: 1-800-421-6338.

March 7 The Computer Show & Sale. Sonoma Co. Fairgrounds. MarketPro. Call: (415)388-8893.

March 8-10 CaseWorld: The National Application Development Conference & Exposition. San Francisco. DCI. Call: (508)470-3880.

March 13 Computer Show & Sale. Oakland Coliseum. Richard James. Call: 1-800-533-7220.

March 13-14 Sacramento Atari Computer

Exposition. Sacramento. Sacramento ST User Group. Call: Nick Langdon, (916)723-6425.

March 14 The Computer Show & Sale. Solano Co. Fairgrounds. MarketPro. Call: (415)388-8893.

March 16-17 The Workgroup Computing Conference. Washington, DC. DCI. Call: (508)470-3880.

March 20 Computer Show & Sale. San Mateo Expo Center. Richard James. Call: 1-800-533-7220.

March 21 The Computer Show & Sale. Scottish Rite Center, Sacramento. MarketPro. Call: (415)388-8893.

March 27 Computer Show & Sale. Santa Clara Co. Fairgrounds. Richard James. Call: 1-800-533-7220.

March 27 The Computer Show & Sale. Sonoma Co. Fairgrounds. MarketPro. Call: (415)388-8893.

APRIL

April 4 The Computer Show & Sale. Centennial Hall, Hayward. MarketPro. Call: (415)388-8893.

April 17 The Computer Show & Sale. Solano Co. Fairgrounds. MarketPro. Call: (415)388-8893.

April 18 The Computer Show & Sale. Sonoma Co. Fairgrounds. MarketPro. Call: (415)388-8893.

April 25 The Computer Show & Sale. Scottish Rite Center, Sacramento. MarketPro. Call: (415)388-8893.

April 27-29 The Fifth Annual Monterey Software Conference. Monterey. DCI. Call: (508)470-3880.

CLASSES, SEMINARS, AND WORKSHOPS

FEBRUARY

February 1 Aldus PageMaker II Class. San Francisco. Media Alliance/Computer Access. Call: (415)441-2557.

February 1-2 Microsoft Project For The Mac Class. San Francisco. Abacus Training. Call: (415)974-7200.

February 2 Claris FileMaker Pro I Class. San Francisco. Media Alliance/Computer Access.

MARCH 20

CALIFORNIA COMPUTER SHOW & SALE

San Mateo Expo Center

The California Computer Show and Sale returns to the San Mateo Expo Center after a five-month absence. The facility is centrally located on the peninsula and is easily accessible from major highways. The show will feature direct importers and manufacturers, offering the latest software and peripherals for up to 80% off of retail cost. Admission is \$6.00. Call: 1-800-533-7220.

Call: (415)441-2557.

February 2-3 HyperCard Stack Development Class. San Jose. Abacus Training. Call: (415)974-7200.

February 2-3 Successful GUI Migration Strategies Seminar. San Francisco. DCI. Call: (508)470-3880.

February 3 Beginning dBASE IV Class. Emeryville. Northwest Computer Systems. Call: (510)653-0808.

February 4 Intro To FoxPro 2.0 Class. Emeryville. Northwest Computer Systems. Call: (510)653-0808.

February 4-5 Effective GUI Design Seminar. San Francisco. DCI. Call: (508)470-3880.

February 4-5 HyperCard Stack Development Class. San Francisco. Abacus Training. Call: (415)974-7200.

February 5 Beginning Excel 4.0 Class. Emeryville. Northwest Computer Systems. Call: (510)653-0808.

February 6 IBM PC Clone Hardware Upgrade Seminar. Oakland. Excel Micro Solutions. Call: (510)836-2040.

February 8 Intermediate DOS Class. San Rafael. Computer Training Center. Call: (415)459-3200.

February 8 Intro To Macintosh Networks Class. San Francisco. Abacus Training. Call: (415)974-7200.

February 8 Intro To QuarkXPress Class. San Francisco. Media Alliance/Computer Access. Call: (415)441-2557.

February 8 Supporting System 7 Class. San

Continued

Calendar Of Events continued

Jose. Abacus Training. Call: (415)974-7200.

February 8-9 PC Repair Workshop. Oakland. Excel Micro Solutions. Call: (510)836-2040.

February 9 Claris FileMaker Pro II Class. San Francisco. Media Alliance/Computer Access. Call: (415)441-2557.

February 9 Intro To Macintosh Networks Class. San Jose. Abacus Training. Call: (415)974-7200.

February 9 Intro To Personal Computers Class. San Rafael. Computer Training Center. Call: (415)459-3200.

February 9 Intro To Word For Windows Class. Walnut Creek. Computer Education Center. Call: (510)937-2566.

February 9 Supporting System 7 Class. San Francisco. Abacus Training. Call: (415)974-7200.

February 10 Aldus PageMaker I Class. San Francisco. Media Alliance/Computer Access. Call: (415)441-2557.

February 10 Intermediate WordPerfect For DOS Class. San Rafael. Computer Training Center. Call: (415)459-3200.

February 10 Intro To DOS Class. Walnut Creek. Computer Education Center. Call: (510)937-2566.

February 10 LAN Fundamentals Class. San Francisco. Abacus Training. Call: (415)974-7200.

February 10-11 Multimedia Software Design Workshop. Santa Clara. UC Santa Cruz Extension. Call: (408)748-7375.

February 11 Beginning Lotus 1-2-3 For DOS Class. San Rafael. Computer Training Center. Call: (415)459-3200.

February 11 Intro To MS-DOS 5.0 Class. Emeryville. Northwest Computer Systems. Call: (510)653-0808.

February 11 Intro To Paradox Class. Walnut Creek. Computer Education Center. Call: (510)937-2566.

February 11-12 Local Area Networks:

LANtastic To Novell Workshop. Oakland. Excel Micro Solutions. Call: (510)836-2040.

February 12 Intermediate Quattro Pro For Windows Class. San Rafael. Computer Training Center. Call: (415)459-3200.

February 12 Intro To Excel For Windows Class. Walnut Creek. Computer Education Center. Call: (510)937-2566.

February 12 Intro To Windows 3.1 Class. Emeryville. Northwest Computer Systems. Call: (510)653-0808.

February 13-15 Novell System Supervisor 3.11 Class. Emeryville. Northwest Computer Systems. Call: (510)653-0808.

February 15 Beginning Quattro Pro 3.0/4.0 Class. Emeryville. Northwest Computer Systems. Call: (510)653-0808.

February 16 Beginning WordPerfect For DOS Class. San Rafael. Computer Training Center. Call: (415)459-3200.

February 16 Intermediate Excel 4.0 Class. Emeryville. Northwest Computer Systems. Call: (510)653-0808.

February 16 Intermediate FoxPro 2.0 Class. Emeryville. Northwest Computer Systems. Call: (510)653-0808.

February 16 Intro To MS Word Class. San Francisco. Media Alliance/Computer Access. Call: (415)441-2557.

February 16 Intro To WordPerfect For Windows Class. Walnut Creek. Computer Education Center. Call: (510)937-2566.

February 17 Aldus PageMaker II Class. San Francisco. Media Alliance/Computer Access. Call: (415)441-2557.

February 17 Intermediate Quattro Pro For DOS Class. San Rafael. Computer Training Center. Call: (415)459-3200.

February 17 Intro WordPerfect For Windows 5.1 Class. Emeryville. Northwest Computer Systems. Call: (510)653-0808.

February 17 NetWare For The User Class. San Francisco. Abacus Training. Call: (415)974-7200.

February 17 WordPerfect For The Legal Profession Class. Walnut Creek. Computer Education Center. Call: (510)937-2566.

February 17-March 10 Integrated Media Production Class. San Francisco. Center for Electronic Art. Call: (415)956-6500.

February 18 Beginning DOS Class. San Rafael. Computer Training Center. Call: (415)459-3200.

February 18 Intro To WordPerfect For Windows Class. Walnut Creek. Computer Education Center. Call: (510)937-2566.

February 18 Ten Things You Should Know Before You Automate Your Business Ac-

countingSystem (Free) Workshop. San Francisco. JC Lukrich & Co. Call: Beth Markus. (415)905-6900.

February 18-19 Local Area Networks: LANtastic To Novell Workshop. Oakland. Excel Micro Solutions. Call: (510)836-2040.

February 19 Adobe Illustrator I Class. San Francisco. Media Alliance/Computer Access. Call: (415)441-2557.

February 19 Beginning Excel Class. San Rafael. Computer Training Center. Call: (415)459-3200.

February 19 Beginning Word 2.0 For Windows Class. Emeryville. Northwest Computer Systems. Call: (510)653-0808.

February 19 Macintosh Network Administration Class. San Francisco. Abacus Training. Call: (415)974-7200.

February 19 WordPerfect Desktop Publishing Class. Walnut Creek. Computer Education Center. Call: (510)937-2566.

February 20 How To Build Your Own 486 PC Computer For Under \$770 Class. Salinas. Hartnell College. Call: (408)755-6800.

February 20 Intermediate CorelDraw Class. San Rafael. Computer Training Center. Call: (415)459-3200.

February 20 Intermediate QuarkXPress Class. San Francisco. Media Alliance/Computer Access. Call: (415)441-2557.

February 20 Principles Of Computer Animation Workshop. Santa Clara. UC Santa Cruz Extension. Call: (408)748-7375.

February 20-21 NetWare System Administration Course 1. Oakland. MIS Services. Call: (510)208-5720.

February 22 Advanced WordPerfect For Windows Class. San Rafael. Computer Training Center. Call: (415)459-3200.

February 22 Intermediate Paradox Class. Walnut Creek. Computer Education Center. Call: (510)937-2566.

February 22-23 PC Repair Workshop. Oakland. Excel Micro Solutions. Call: (510)836-2040.

February 22-26 UNIX For Software Developers Course. Santa Clara. Bill Rieken. Call: (408)241-8319.

February 23 Beginning Lotus 1-2-3 For Windows Class. San Rafael. Computer Training Center. Call: (415)459-3200.

February 23 Intermediate MS Word Class. San Francisco. Media Alliance/Computer Access. Call: (415)441-2557.

February 23 Intermediate Word For Windows Class. Walnut Creek. Computer Education Center. Call: (510)937-2566.

February 23-24 Finkelstein's Practical Guide

FEBRUARY 18

VIRTUAL REALITY GROUP

San Francisco

The Virtual Reality Group (VRG) is a new, nonprofit organization dedicated to supporting and promoting the development of VR technologies in the Bay Area. VRG welcomes all manner of scientists, artists, philosophers, educators, and technophiles to share their perspectives on VR. The topic of the third meeting of VRG will be "Computer Graphics and Virtual Reality," and will include a videophone link-up with the Southern California VR SIG, where Brett Leonard (*Lawnmower Man*) will be speaking. For more information, contact: Linda Jacobson, (415)826-4716; email: lindaj@well.sf.ca.us. Or, Timothy Childs, tchilds@well.sf.ca.us.

Continued



\$0 DOWN 90 DAYS SAME AS CASH

ON APPROVAL OF CREDIT
1 YEAR PARTS & LIFETIME LABOR WARRANTY!

All Systems Include: Mini Tower Case; 1MB RAM; IDE Controller (2HD, 2FD); AT I/O (2s, 1p, 1g) Ports; 101 Enhanced Keyboard

386SX-25

- 80 MB Hard Disk
- 1.2 or 1.44 FD
- SVGA Monitor and Card

\$759

386DX-40

- 64K Cache
- 130 MB Hard Disk
- 1.2 or 1.44 FD
- SVGA Monitor and Card

\$888

486SX-25

- 64K Cache
- 130 MB Hard Disk
- 1.2 or 1.44 FD
- SVGA Monitor and Card

\$939

486DX-33

- 64K Cache
- 130 MB Hard Disk
- 1.2 or 1.44 FD
- SVGA Monitor and Card

\$1149

486DX-50

- 64K Cache
- 130 MB Hard Disk
- 1.2 or 1.44 FD
- SVGA Monitor and Card

\$1329

486DX2-66

- 64K Cache
- 130 MB Hard Disk
- 1.2 or 1.44 FD
- SVGA Monitor and Card

\$1429

486DX-33

VESA Local Bus

- 64K Cache
- 130 MB Hard Disk
- 1.2 or 1.44 FD
- SVGA Monitor and Card

\$1249

486DX2-66

VESA Local Bus

- 64K Cache
- 130 MB Hard Disk
- 1.2 or 1.44 FD
- SVGA Monitor and Card

\$1529

486DX-50 EISA

- 256K Cache
- 130 MB Hard Disk
- 1.2 or 1.44 FD
- SVGA Monitor and Card

\$1629

PERIPHERALS AND ACCESSORIES

MONITORS

Impression 1024x768 .39dp	\$220
Impression 1024x768 .28dp	260
Impression 1024x768 .28, NI	295
Impression 3	305
Impression 7	850
Viewsonic 4E	300
Viewsonic 6E	339
Viewsonic 6FS	615
Viewsonic 7	999
NEC 3FGX	650
NEC 4FG	750
NEC 5FG	1375

HARD DRIVES

40 MB IDE	\$170
80 MB IDE	236
130 MB IDE/SCSI	260/319
170 MB IDE	310
213 MB IDE	380
200 MB SCSI	490
535 IDE/SCSI	935/985
1.2 GB SCSI	1474

VIDEO CARDS

Trident 512K	\$40
Trident 1 MB	60
Diamond Stealth	210
Diamond 24X	180
ATI Graphics Ultra	280
Orchid Pro Designer IIs	135
Orchid Fahrenheit	195

PRINTERS

Panasonic 1123	\$208
Panasonic 2123	245
Panasonic KX-P4410	645
Panasonic KX-P4430	895
HP Laser IIP+	785
HP Laser IIP	999
HP Laser IV	1420

MISC.

2400B Modem	\$38
Fax/Modem (9600/2400)	70
Summit Tape Back-Up	
120 MB	185
250 MB	230
Colorado Tape Back-Up	
120 MB	195
250 MB	245
Archive Tape Back-Up 250 MB	195
Ethernet Card 16-Bit	99
Logitech Scanman 32 w/OCR Software	139/185
Logitech Scanman 256 w/OCR Software	249/299
3 Button Mouse	15
Logitech First Mouse	40
Logitech MouseMan	75

We Are HKG COMPUTERS
(Hardware Knowledge Group)
and We Are Committed To Serve
All Your Computer Needs!

MULTIMEDIA

- Sound Blaster Multi-Media Upgrade Kit w/CD-ROM, Sound Board, 6 Titles \$550
- Video Blaster 370
- Sound Blaster Pro w/Midi Kit 189



WE DO CUSTOM PROGRAMMING AND SOFTWARE CONSULTING

- DOS
- Windows
- C, C++
- Dbase
- FoxPro
- Clipper

CALL FOR MORE INFO



M-F: 10am-7pm
Sat: 10am-7pm
Sun: 11am-6pm

Corporate PO's Welcome

**448- EAST EL CAMINO REAL
SUNNYVALE, CA 94087**

(408)-SEEK-HKG (733-5454)
Fax: (408) 733-5456



Prices Subject To Change W/O Notice



RESOURCES

Calendar Of Events continued

To Client/Server DBMS Computing Seminar. San Francisco. DCI. Call: (508)470-3880.

February 23-24 NetWare 386 Advanced Administration (v3.1 & v3.11) Class. San Francisco. Abacus Training. Call: (415)974-7200.

February 24 Aldus FreeHand I Class. San Francisco. MediaAlliance/ComputerAccess. Call: (415)441-2557.

February 24 Intermediate Excel Class. San Rafael. Computer Training Center. Call: (415)459-3200.

February 24 Intermediate Lotus 1-2-3 Class. Walnut Creek. Computer Education Center. Call: (510)937-2566.

February 24-25 Microsoft Project For The Mac Class. San Jose. Abacus Training. Call: (415)974-7200.

February 24 & 26 4th Dimension Class. San Jose. Abacus Training. Call: (415)974-7200.

February 25 Advanced Lotus 1-2-3 For DOS Class. San Rafael. Computer Training Center. Call: (415)459-3200.

February 25 Intermediate Excel For Windows Class. Walnut Creek. Computer Education Center. Call: (510)937-2566.

February 25 Macintosh Network Administration Class. San Jose. Abacus Training. Call: (415)974-7200.

February 26 Adobe Illustrator II Class. San Francisco. MediaAlliance/ComputerAccess. Call: (415)441-2557.

February 26 Advanced FoxPro 2.0 Class. Emeryville. Northwest Computer Systems. Call: (510)653-0808.

February 26 Advanced WordPerfect For DOS Class. San Rafael. Computer Training Center. Call: (415)459-3200.

February 26 Intermediate WordPerfect Class. Walnut Creek. Computer Education Center. Call: (510)937-2566.

February 27 Beginning WordPerfect For DOS Class. San Rafael. Computer Training Center. Call: (415)459-3200.

February 27 How To Build Your Own 486 PC

Computer For Under \$770 Class. Eureka. College of the Redwoods. Call: 1-800-788-0248 or (707)864-7115.

February 27 IBM PC Clone Hardware Upgrade Seminar. Oakland. Excel Micro Solutions. Call: (510)836-2040.

February 27 Intro To QuarkXPress Class. San Francisco. MediaAlliance/ComputerAccess. Call: (415)441-2557.

February 27-March 2 NetWare System Administration Course 2. Oakland. MIS Services. Call: (510)208-5720.

February 28 Computer Show & Sale. Alameda County Fairgrounds. Richard James. Call: 1-800-533-7220.

MARCH

March 1 Beginning Approach Class. Walnut Creek. New Horizons. Call: 1-800-999-6954.

March 1 Beginning Microsoft Windows Class. San Rafael. Computer Training Center. Call: (415)459-3200.

March 1 Beginning Word (For Macintosh) Class. San Francisco. New Horizons. Call: 1-800-999-6954.

March 1-22 Photoshop I Class. San Francisco. Center for Electronic Art. Call: (415)956-6500.

March 2 Intro To Personal Computers Class. San Rafael. Computer Training Center. Call: (415)459-3200.

March 2 Intro To QuarkXPress Class. San Francisco. MediaAlliance/ComputerAccess. Call: (415)441-2557.

March 2 Intro To WordPerfect Class. Walnut Creek. Computer Education Center. Call: (510)937-2566.

March 3 Access Class. San Francisco. New Horizons. Call: 1-800-999-6954.

March 3 Aldus FreeHand II Class. San Francisco. MediaAlliance/ComputerAccess. Call: (415)441-2557.

March 3 Beginning Lotus 1-2-3 For DOS Class. San Rafael. Computer Training Center. Call: (415)459-3200.

March 3 Intro To Windows Class. Walnut Creek. Computer Education Center. Call: (510)937-2566.

March 4 Beginning Quattro Pro Class. San Francisco. New Horizons. Call: 1-800-999-6954.

March 4 Beginning Quattro Pro For DOS Class. San Rafael. Computer Training Center. Call: (415)459-3200.

March 4 Intro To FoxPro 2.0 Class. Emeryville. Northwest Computer Systems. Call: (510)653-0808.

March 4 Intro To Lotus 1-2-3 Class. Walnut

Creek. Computer Education Center. Call: (510)937-2566.

March 5 Beginning Approach Class. San Francisco. New Horizons. Call: 1-800-999-6954.

March 5 Beginning Excel 4.0 Class. Emeryville. Northwest Computer Systems. Call: (510)653-0808.

March 5 HyperCard Intro Class. San Francisco. Abacus Training. Call: (415)974-7200.

March 5 Intermediate Lotus 1-2-3 For DOS Class. San Rafael. Computer Training Center. Call: (415)459-3200.

March 5 Intro To WordPerfect For Windows Class. Walnut Creek. Computer Education Center. Call: (510)937-2566.

March 6 Advanced PageMaker Class. San Rafael. Computer Training Center. Call: (415)459-3200.

March 6 Build & Upgrade An IBM PC Clone Seminar. Oakland. Excel Micro Solutions. Call: (510)836-2040.

March 6 Computer Show & Sale. Santa Clara County Fairgrounds. Richard James. Call: 1-800-533-7220.

March 6 How To Build Your Own 486 PC Computer For Under \$770 Class. Los Altos. Foothill College. Call: (415)574-6563.

March 6 Multimedia Seminar: Hoax Or Dynamic Productivity Tool? San Francisco. UltraVision. Call: (415)863-8407.

March 8 Beginning QuarkXPress Class. San Francisco. New Horizons. Call: 1-800-999-6954.

March 8 Beginning Word (For Macintosh) Class. Walnut Creek. New Horizons. Call: 1-800-999-6954.

March 8 Intermediate WordPerfect For DOS Class. San Rafael. Computer Training Center. Call: (415)459-3200.

March 8 Supporting System 7 Class. San Francisco. Abacus Training. Call: (415)974-7200.

March 8 Supporting System 7 Class. San Jose. Abacus Training. Call: (415)974-7200.

March 8-9 PC Repair Workshop. Oakland. Excel Micro Solutions. Call: (510)836-2040.

March 8-12 UNIX For System Programmers Course. Santa Clara. Bill Rieken. Call: (408)241-8319.

March 9 Beginning Microsoft Windows Class. San Rafael. Computer Training Center. Call: (415)459-3200.

March 9 Intermediate QuarkXPress Class. San Francisco. MediaAlliance/ComputerAccess. Call: (415)441-2557.

March 9 Intro To Macintosh Networks Class. San Francisco. Abacus Training. Call:

Continued

NANOSYSTEMS STUDY GROUP

Stanford University

The study group will study each chapter in detail of Eric Drexler's book, *Nanosystems: Molecular Machinery, Manufacturing, and Computation*. The group plans to create exercises for the chapters that will be used in courses around the country. Meetings are held every other Monday at Univeristy Lutheran Church, 1611 Stanford Ave., Palo Alto. For information contact: Ted Kaehler, (408)974-6241; email: Kaehler2@AppleLink.Apple.com. Or Bob Solovay, solovay@math.berkeley.edu.

NITRONIC CORPORATION

5 YEAR LABOR 1 YEAR PARTS WARRANTY

PC REPAIRS &
MAINTENANCE WELCOME
REASONABLE PRICES!

4 8 6
33 / 50 MHz
W / 64K CACHE

- 4MB up to 32MB
- 8K internal cache
- Landmark = 152/167
- Shadow RAM

COMPLETE SYSTEM
\$1239/1419

3 8 6
25/33/40 MHz
W / 64K CACHE

- 4MB up to 32MB
- Landmark = 44/56/65
- Shadow RAM

COMPLETE SYSTEM
\$980/989/995

4 8 6 SX
20 / 25 MHz

- 4MB up to 32MB
- 8K internal cache
- Landmark = 92
- Shadow RAM

COMPLETE SYSTEM
\$1015/1060

3 8 6 SX
16 / 25 MHz

- 4MB up to 8MB
- Landmark = 23.5/34
- Shadow RAM
- Page Interleave

COMPLETE SYSTEM
\$920/930

COMPLETE SYSTEM INCLUDES: 4 MB RAM, 1.2 & 1.44 MB Floppy Drive, 120 MB Hard Drive, Trident VGA Card w/1 MB, and SVGA Monitor, IDE/IO Card, 101 Key Keyboard, Case & Power Supply

BASE SYSTEM INCLUDES:

Motherboard with CPU,
1MB RAM, 1.2 or 1.44 floppy drive,
IDE controller, Enhanced 101 key
Keyboard, mini-tower case or
desktop case with power supply.

BASE SYSTEMS

486DX 33/50 MHz w/64K CACHE
\$575/755

486SX 20/25 MHz
\$345/395
Add \$30 for 256K Cache

386DX 25/33/40 MHz w/64K Cache
\$315/320/330

386SX 16/25 MHz
\$245/255
Add \$180 for EISA Board

CASE & POWER SUPPLY

Minitower w/200 Watt	\$50
Desktop w/200 Watt	\$54
Middle Tower w/230 Watt	\$88
Full Tower w/250 Watt	\$116
200W Power Supply	\$31
200W Power Supply	\$36
285W Power Supply	\$39
230W AT Power Supply	\$39

VGA CARDS

VGA (800x600, 256K)	\$25
Trident 512K	\$35
Trident 1MB	\$53
Tseng ET4000	\$78
Tseng ET4000H w/Hi-Color	\$89
Orchid Fahrenheit	\$198
ATI XL w/mouse	\$135
ATI Vantage w/mouse	\$245
Diamond Speedstar 24X	\$179
Diamond Speedstar 24	\$145
Diamond Stealth w/Sierra	\$215

INTERFACE CARD

MGP Card	\$15
I/O w/2S,1P,1GP	\$13
IDE Controller	\$13
IDE w/IO	\$15
SCSI AT BUS	\$69

SOUND CARD & CD ROM

Sound Blaster Pro	\$169
Sound Galaxy Pro	\$165
Sound Galaxy NX	\$120
Sony CD ROM Kit	\$469
(w/stereo sound card & 5 CDs)	
Toshiba 3401B & SCSI Card	\$510
Sony CD ROM	\$260

FLOPPY DRIVES

Teac 1.2 5.25"	\$54
Teac 1.44 3.5" w/kit	\$53
Epson Floppy 1.2, 5.25"	\$49
Epson Floppy 1.44, 3.5"	\$48

MISC.

287-10	\$40
387SX-16/25	\$69/79
387-25/33/40	\$91/95/99
Windows 3.1 w/mouse	\$49
Windows 3.1 w/o mouse	\$36
1MB 9x70 simm	\$30
256Kx9-70 simm	\$10
4MBx9-70 simm	\$115

**FOR PRODUCTS NOT
LISTED...PLEASE CALL**

MOTHERBOARD & CPU

286-12/16	\$59/69
386SX 16/25	\$93/99
386-25 64K	\$165
386-33 64K	\$169
386-40 64K	\$175
486-20/25	\$189/239
486-33 64K	\$419
486-50 256K	\$595
486-33 256K Local Bus w/S3 Video Card	\$695

MICE

Logitech mouse man	\$59
Logitech Trackman serial	\$73
Microsoft OEM	\$49
Microsoft compatible	\$12
Microsoft Mouse	\$55

KEYBOARD

101 Enhanced	\$20
Maxiswitch	\$30
Keytronic	\$35
Zeos-Like	\$32

TAPE DRIVES

120MB Colorado	\$185
250MB Colorado	\$245
250MB Archive	\$195

HARD DISK

40MB Conner/IBM	\$140
80MB	\$182
120MB Conner	\$230
130MB	\$235
170MB	\$270
200MB Maxtor	\$340
340MB Maxtor	\$605
200MB/256K Cache Conner	\$350
520MB Fujitsu	\$899
1.05GB Fujitsu	\$1390

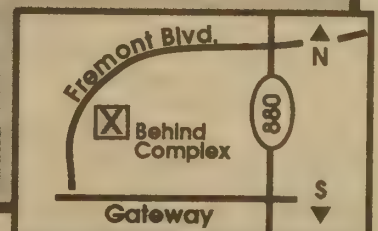
MODEMS

2400 baud (int/ext)	\$33/59
Pocket Fax(s) Modem	\$63
Fax/Modem 9600/2400	\$65
9600 (ext. mnp5)	\$199

MONITORS

12" Mono	\$75
14" Mono	\$90
VGA 640x480 .39	\$220
SVGA .39	\$220
SVGA 1024x768 .28	\$250
SVGA Non-Int	\$285
Sony 1304 Non-Int	\$560
NEC 4FG 15" Non-Int	\$745

(510) 657-1798
FAX (510) 657-4086
46560 FREMONT BLVD. #117
FREMONT, CA 94538
HOURS: M-F 9:00-5:30, SAT. 10:00-3:00



5 Year Labor, 1 Year Parts
Warranty
Company P.O.'s welcome. UPS
Shipping Daily. Prices subject to
change w/o notice. All brand
names are registered
trademarks.

USM

US MACH

**US MACH Systems
USM Distributors**



Incorporated
1983



HOURS: M-F 9-6 • Sat 10-5

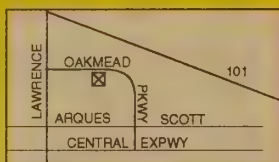
Price and availability subject to change.
No surcharge for credit cards.

Visit our stores

In SOUTHERN CALIFORNIA:

USM BREA (714) 255-0113

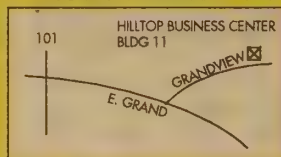
USM IRVINE (714) 252-8335



USM SUNNYVALE

1290 Oakmead Parkway, Sunnyvale, CA 94086

408-738-8291 FAX: 408-738-8299



USM SAN FRANCISCO

1101 Grandview Drive So. San Francisco, CA 94080

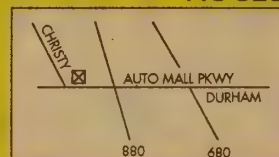
415-952-5885 FAX: 415-266-9134



USM PALO ALTO

540 University Ave. Palo Alto, CA 94310

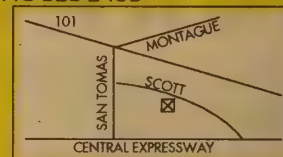
415-325-0651 FAX: 415-325-2459



USM FREMONT

43104 Christy Street Fremont, CA 94538

510-623-9040 FAX: 510-623-7592



USM SANTA CLARA

3070 Scott Blvd. Santa Clara, CA 95054

408-980-0603 FAX: 408-980-0604

SUPER SYSTEM SPECIALS

HURRY!
Limited Promotion

SYSTEM CONFIGURATION:

- 4MB, 70ns RAM
- 130/170/213MB Hard Disk
- 2 Floppies—1.2MB & 1.44MB
- SVGA Monitor 1024x768 .28 dp
- SVGA Card w/1MB
- 101 Enhanced Keyboard
- 2 Serial, 1 Parallel, 1 Game port
- Enhanced Case,
Minitower/Desktop

OPTIONS:

- Non-Interlaced Monitor Add \$40
- 256K Cache Upgrade Add \$50
- Multimedia Upgrade Kits.. Lowest Price

OTHER UPGRADE OPTIONS AVAILABLE

Due to fluctuating CPU & RAM costs, please call to confirm prices

	130MB	170MB	213MB
386-40/64k	\$993	\$1043	\$1093
486SX-25	\$1093	\$1143	\$1193
486-33DLC/64k	\$1193	\$1243	\$1293
486-33INTEL/64k	\$1293	\$1343	\$1393
486-50/64k	\$1493	\$1543	\$1593
486-66/64k	\$1593	\$1643	\$1693

FREE Serial Mouse w/ complete system purchase

MOTHERBOARDS

GUARANTEED LOWEST PRICES!!



**American
Megatrends**

MICRONICS



ORCHID

CLONES - Call for Low Pricing!

New! Conner SofStor
Includes: DOS 5.0, Windows 3.1,
Microsoft Works, Central Point
Anti-Virus software

85MB \$399

170MB 479



Name Brand Specials Call USM for Lowest Prices

**Hard Drive
LIMITED SALE!!**

Maxtor®

130MB 15ms IDE 7120 \$245

213MB 15ms IDE 7213 \$355

340MB 15ms LXT340A \$595

535MB 12ms LXT535 \$895

FUJITSU

520MB 12ms IDE2624T **CALL**

CONNER

170MB 16ms \$289

**Other Sizes
Call US Mach for
Lowest Prices**



QUICKPATH

486-66DX2

\$995

3 yr. Motherbd. Warranty
MADE in USA

Port+Folio w/4 ser/2 par/

4 FD/2HD/ 1 game port \$95

w/16550 UART 125

**hp HEWLETT
PACKARD**

LaserJet IV **CALL**

NORTHGATE KEYBOARDS

Omnikey 101ni/102 \$79

Omnikey Ultra **CALL**

MULTIMEDIA SOLUTION

Chinon CD-ROM w/

Crystal CD Collection \$495

Creative Labs Multimedia

Upgrade Kit **CALL**

Mediavision Upgrade Kit **CALL**

**LEADING EDGE 386SL 25
COLOR NOTEBOOK**

\$2295



High Performance Motherboards

Baby Screamer 386-33	\$295
SuperVoyager LC ISA	
486-33	795
486-50	995
486-66	1045
NEW AMI Baby EISA w/256k	
486-33	1195
486-50/66	1195/1295
EISA Fastview 1MB	295
FASTDISK NC SCSI-EISA	375
FASTDISK CACHE	495

MICRONICS

XCP 486-33/256k ISA.....	\$645
VCP 486-33/256k VL-Bus....	\$795
E3 486-33/256k EISA	\$895
XCP 486-66/256k ISA.....	\$945
VCP 486-66/256k VL-Bus .	\$1175
E3 486-66/256k EISA	\$1195
MICRONICS SVGA-VLB.....	\$195
ATI MACH 32 1MB	\$345
ATI MACH 32 2MB	\$495
34F VLB-SCSI	\$295

Factory Authorized Distributor - Guaranteed Lowest Prices on AMI, Micronics, Orchid Systems



ORCHID VL-BUS 486-33

- ORCHID Superboard 486-33 VLB
- 4MB, 70ns • 256k Cache
- Maxtor 130MB, 15ms
- Northgate Omnikey 101
- TEAC 1.2 & 1.44 Floppies
- ORCHID Fahrenheit VLB
- Viewsonic 6E Monitor
- 2 Serial/1 Parallel Ports
- Midi Tower

\$1795

ORCHID SUPERBD 486-50 . \$2095

MICRONICS 486-33 VL-BUS

- MICRONICS VCP 486-33 VLB
- 4MB, 70ns • 256k Cache
- Maxtor 130MB, 15ms
- Northgate Omnikey 101
- TEAC 1.2 & 1.44 Floppies
- MICRONICS SVGA/VLB or Fahren.
- Viewsonic 6E Monitor
- On-Board VL-BUS IDE Cntrl.
- 2 Serial/1 Parallel • Built-in IDE IO
- Midi Tower

\$1895

MICRONICS VLB 486-66 \$2275



SuperVoyager VLB 486-33

- AMI SuperVoyager VLB 486-33
- 4MB, 70ns • 256k Cache
- Maxtor 130MB, 15ms
- Northgate Omnikey 101 NI
- TEAC 1.2 & 1.44 Floppies
- VLB-Video/Fahrenheit VLB
- Viewsonic 6E Monitor
- On-Board VL-BUS IDE Cntrl.
- 2 Serial High Speed 16550 UARTS /1 Parallel • Built-in IDE, IO
- Midi Tower

\$1995

AMI SuperVoyager VLB 486-50 \$2195
AMI SuperVoyager VLB 486-66 2295

FAX MODEM SALE

SmartConnect 9624i	\$59
DataFax 9624i	\$109
Hi-Per 96/144	\$229
Comm-panion 9624	\$129
Comm-panion 144/96	\$299



STANDARD TECHNOLOGIES

SVGA MONITORS

14" 1024x768 .39 i....	\$245	17" 1024x768 .31 ni ..	\$645
14" 1024x768 .28 i....	\$275	VIEWSONIC	LOWEST
14" 1024x768 .28 ni ..	\$345	SONY, NEC	LOWEST

SUPER VGA VIDEO CARDS

NEW! 16.7M True Colors	\$95
CIRRUS LOGIC CHIP SVGA 1MB	
SVGA 1MB (256k Colors)	\$65
SVGA 512k	\$45

MULTIMEDIA

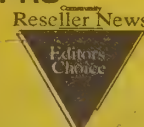
LATEST PRODUCTS...LOWEST PRICES

CREATIVE

CREATIVE LABS, INC.

*Pioneer of
Multimedia Technology!*

SOUND BLASTER
SOUND BLASTER PRO BASIC
SOUND BLASTER PRO
PORT BLASTER
MIDI BLASTER
WAVE BLASTER



SOUND BLASTER 16 ASP
SOUND BLASTER
CD-ROM UPGRADE KIT
SOUND BLASTER
MULTIMEDIA STARTER KIT
SOUND BLASTER
MULTIMEDIA UPGRADE KIT

MEDIA VISION

*Multimedia
Experts!*



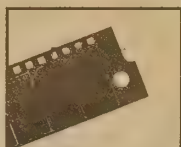
FUSION CD
THUNDER BOARD for WINDOWS
PRO AUDIO SPECTRUM 16
SPECTRUM PLUS

FUSION CD

**1 YEAR
WARRANTY
ON ALL MEMORY**

CMC

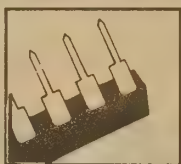
SIMMS



256K VRAM 29
512K VRAM 58

32/64 MB Kits for
Mac Ili, FX &
Quadra 700 &
900/950...CALL

DRAMS



STATIC RAM (Cache RAM)...CALL
Call For Lowest Pricing Items Not Listed!

MATH CO's



Call For Pricing On IIT, CYRIX, ULSI & Weitek

LASER PRINTER MEMORY



IBM LASER

4019/4019E
1/2 MB Bld. ... \$89/114
3.5 MB Bld. 169
4029 4 MB 139

EPSON LASER

6000
2/4 MB .. \$119/179
7000
2/3 MB 125/159
Action Laser II
2/4 MB 108/169

OTHER LASER PRINTER MEMORY

Apple Laserwriter II/IIINT/IIINTX 4 MB \$139
Brother HL-4 2/3/4 MB 119/165/189
Fujitsu RX100/7200 1/2 MB 185/245
Kyocera F800, F800A, F800T 1 MB 95
NEC Silentwriter 90/290 1/2 MB 99/124
NEC Silentwriter 95 2 MB 104
QMS PS410 2/3/4 MB 119/165/189
TI Microlaser 1 MB 55
Facit P6060, AT&T 593, TEC 1305B
PB9600, Toshiba Pagelaser 6, NCR 6435,
Mannesman Tally 905/906 2/4 MB 109/179

IBM

1x9-60 3 Chip \$34
1x9-70 3 Chip 31
1x9-80 3 Chip 30
1x9-70/80 9 Chip .. 34/33
1x9-100 9 Chip 28
4x9-60 9 Chip 132
4x9-70 9 Chip 124
4x9-80 9 Chip 119
16x9-70 NEW! 625
Call on SIMMS and SIPPS Not Listed

MAC

1x8-80 2 Chip \$28
1x8-70 2 Chip 29
1x8-80/70 8 Chip 29/30
2x8-80/70 60/63
4x8-80/70 109/112
16x8-70 NEW! 510
MacIliX 4/16MB ... 135/480

DRAMS

256x1-80 \$150
256x1-120 94
256x1-10 135
256x4-70/80 400
64x4-80/100 175
1x4-80/70 16/17
1MBx1-70 395
1MBx1-80 380
ZIP/POJ CALL

INTEL/IIT

287XL Intel \$55
387SX-16/20 64
387SX-25 CYRIX 69
387SX-33 ULSI 74
387DX-20 Intel 54
387DX-25 Intel 67
387DX-33 Intel 77
387DX-40 Cyrix/IIT 87
287-10 Intel 45
8087-1/2 Intel 79/49
Weitek 4167-25 329

HP-ALL MODELS

2 MB Board \$99
4 MB Board 159
HP/IV 4/8MB 149/289
Ilii 4/8 MB 135/264
DesignJet Plotters
4 MB 144
LaserJet FAX 1 MB ... 79
DeskJet 500 256K 52
PostScript Cartridge
for HP 219

PANASONIC

KXP4410/KXP4430
1/2 MB \$95/129
3/4 MB 159/189
KXP4420/4450I
1/2 MB Board ... 89/115
3/4 MB Board 144/169
KXP4450 1MB 115

OKI 400

1/2 MB Board .. \$84/104
800/820 Only 79/99
2/4 MB Board 104/159

NOTEBOOK/LAPTOP MEMORY

Altima LSX 2/4 MB ... \$165/249
AST Exec (70ns) 4 MB 134
Chaplet Notebook 2/4 MB 155/249
Compaq Contura 2/4/8MB .. 129/195/369
Epson NBS3 1/4 MB 98/225
Everex Tempo LX 2 MB 84
IBM L40SX, N33/SX, 57SX
Goldstar GS520 2/4/8MB .. 99/155/299
Mac PB 140, 170 1/4 MB 129/295
Mac PB 100 2/4/6MB .. 89/175/229
Magnavox Metalis 386SX 2/4/6MB .. 89/179/254
4 MB 189
NEC Ultralite 286F 1/4 MB 99/199
Packard Bell 386/SX 1/4 MB 99/225
Panasonic CF 170/270/370 1/2 MB 69/99
Sampo Notebook SX/16, SX/25 2/4 MB 145/225
Samsung Notemaster 2/4 MB 179/295
Sharp PC 8501 2 MB 105
Tandon 386/SX 2/8 MB 105/399
Toshiba 4400/T6400 4/8 MB 219/368
T1600/3100E/T5100 2 MB 87
T3100SX/T3200SX 2/4 MB 105/157
T3300SL 2/4/6MB .. 135/199/279
TI Travelmate 2000 1 MB 77
TI Travelmate 3000 2 MB 69
TI Travelmate 4000 4 MB 219

IBM PS/2 & PS/1 MEMORY

Model	P/N
PS/1 286/386SX	2/4 MB \$95/149
PS/2 30-286	2 MB 30F5360 89
50Z, 55SX, 65SX, 70	2 MB 6450604 79
	4 MB 34F2933 145
40SX, 35SX, 35LS	8 MB 6450129 294
70-A21, A61, 121	2 MB 6450608 84
80-111, 121, 311	2 MB 6450379 109
80-A21, A31, A61	4 MB 6451060 210
95, 90, P75, PS/1	2 MB 6450902 110
	4 MB 6450128 155
	8 MB 6450130 294
16 Bit Exp. Bd for Model	
50, 50Z, 60, 65SX	OK 6450609 144
32 Bit Exp. Board for	
All 70 & 80 Models	OK 64F30XX 164

COMPAQ MEMORY

Model	P/N
LTE 286	2 MB 117081-002 .. \$115
	4 MB 117081-003 .. 175
SLT286	4 MB 110237-001 .. 299
LTE 386S/20	2 MB 121125-001 .. 119
	4 MB 121125-002 .. 189
Lite 20/25	2 MB 129769-001 .. 124
	4 MB 129769-002 .. 195
	8 MB 129769-003 .. 369
Portable 386	1 MB 107651-001 .. 109
	4 MB 107653-001 .. 299
Portable III	2 MB 107332-001 79
SLT 386	EDB 167811-001 .. 220
	2 MB 118304-001 .. 119
	4 MB 118305-001 .. 185
Deskpro 386S (E. Bd.)	4 MB 113634-001 .. 229
	4 MB 112534-001 .. 169
Deskpro 386/20e, 25e (E. Bd.)	4 MB 113645-001 .. 229
Deskpro 386/20, 20e, 25e, 25	4 MB 113132-001 .. 169
Deskpro 286N, 386N, 386SX/20, 386/25M, 486/33M, 486/25M, 486S/16M, Systempro, LT486SX/25S, 386/25S	2 MB 118689-001 95
	4 MB 118690-001 .. 149
	8 MB 128877-001 .. 294
L Series & Others	 CALL

SUN

SPARC SLC 4 MB \$144
3/60, 80, 4/40, 60, 65 4 MB 129
16 MB 435
SUN IPX, ELC 4/16 MB 175/495
SUN CLASSIC 16 MB 585
Other Models CALL

AST

Premium 386/25, SX 1 MB \$40
33, 486/25 1/4 MB 37/145
Premium II 386, 486
Executive Notebook (70ns) 4 MB 134
Other Models CALL

RESOURCES

Calendar Of Events continued

(415)974-7200.

March 9 Intro To MS-DOS 5.0 Class. Emeryville. Northwest Computer Systems. Call: (510)653-0808.

March 9-10 CorelDraw Seminar. San Mateo. Altman Associates. Call: (408)252-5448.

March 10 Beginning PowerPoint Class. Walnut Creek. New Horizons. Call: 1-800-999-6954.

March 10 Beginning WordPerfect For DOS Class. San Rafael. Computer Training Center. Call: (415)459-3200.

March 10 Intro To Macintosh Networks Class. San Jose. Abacus Training. Call: (415)974-7200.

March 10-12 Novell System Supervisor 3.11 Class. Emeryville. Northwest Computer Systems. Call: (510)653-0808.

March 11 Beginning WordPerfect For Windows Class. San Rafael. Computer Training Center. Call: (415)459-3200.

March 11 Intermediate Word (For Macintosh) Class. San Francisco. New Horizons. Call: 1-800-999-6954.

March 11 Intro To Windows 3.1 Class. Emeryville. Northwest Computer Systems. Call: (510)653-0808.

March 11-12 Local Area Networks: LANtastic To Novell Workshop. Oakland. Excel Micro Solutions. Call: (510)836-2040.

March 12 Beginning FileMaker Pro For Windows Class. San Francisco. New Horizons. Call: 1-800-999-6954.

March 12 Intermediate FoxPro 2.0 Class. Emeryville. Northwest Computer Systems. Call: (510)653-0808.

March 12 Intermediate Word (For Macintosh) Class. Walnut Creek. New Horizons. Call: 1-800-999-6954.

March 12 Intermediate WordPerfect For Windows Class. San Rafael. Computer Training Center. Call: (415)459-3200.

March 13 Advanced Quark Class. San Francisco. Media Alliance/Computer Access. Call: (415)441-2557.

March 13 Beginning FileMaker Pro For Windows Class. Walnut Creek. New Horizons. Call: 1-800-999-6954.

March 13 Beginning Lotus 1-2-3 For DOS Class. San Rafael. Computer Training Center. Call: (415)459-3200.

March 13 Client Server Architectures In A Windows Environment Seminar. San Francisco. UltraVision. Call: (415)863-8407.

March 13 Digital Video Class. San Francisco. Center for Electronic Art. Call: (415)956-6500.

March 13 How To Build Your Own 486 PC Computer For Under \$770 Class. Kentfield. College of Marin. Call: (415)485-9305.

March 13-14 NetWare System Administration Course 1. Oakland. MIS Services. Call: (510)208-5720.

March 15 LAN Fundamentals Class. San Francisco. Abacus Training. Call: (415)974-7200.

March 16 Beginning FileMaker Pro For Windows Class. Walnut Creek. New Horizons. Call: 1-800-999-6954.

March 16 Beginning Quattro Pro 3.0/4.0 Class. Emeryville. Northwest Computer Systems. Call: (510)653-0808.

March 16 Beginning Word (For Macintosh) Class. San Francisco. New Horizons. Call: 1-800-999-6954.

March 16-17 CorelDraw Seminar. Santa Clara. Altman Associates. Call: (408)252-5448.

March 17 Beginning Quattro Pro Class. Walnut Creek. New Horizons. Call: 1-800-999-6954.

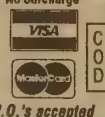
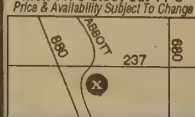
Continued

California Memory & Components
356 S. Abbott Ave., Milpitas, CA 95035
Discount for Resellers, VAR's & Consultants
We Ship Worldwide

TEL: (408) 956-8291
FAX: (408) 956-8584

**All Parts Are New & Guaranteed
S Trade-in Your Existing Memory S**

Mon-Fri 9-5:30 Sat 11-3
Price & Availability Subject To Change



P.O.'s accepted

BEST PRICES • HIGHEST QUALITY • GREAT SERVICE

SYSTEM	MB	BASIC	SYSTEM	MB	BASIC	MONTHLY
VESA LOCAL BUS						
EISA 486DX2-66 W/256K	\$965	\$1145	ISA 486-50 W/256K	\$589	\$769	• EISA VESA LOCAL BUS MOTHERBOARD 2 SLOTS 486-33 W/64K CACHE .....\$119
EISA 486/50 W/256K (3 SLOTS LOCAL BUS)	882	1062				
EISA 486/50 W/128K (3 SLOTS LOCAL BUS)	876	1056	ISA 486-50 W/64K	559	739	
EISA 486-33 W/256K (3 SLOTS LOCAL BUS)	731	911	ISA 486-33 W/256K	436	617	
ISA 486DX2-66 W/256K (3 SLOTS LOCAL BUS)	752	932	ISA 486-33 W/64K	403	583	• IBM .39 VGA MONITOR .....\$193
ISA 486-50 W/256K (3 SLOTS LOCAL BUS)	669	849	386-40 W/64K	164	344	• IDE VESA LOCAL BUS CONTROLLER .....\$58
ISA 486-50 W/128K (3 SLOTS LOCAL BUS)	652	832	386-33 W/64K	159	339	
ISA 486-33 W/256K (2 SLOTS LOCAL BUS)	448	628	386SX-33	94	274	• GENOA 8500 1 MB VGA LOCAL BUS VGA CARD .....\$126
ISA 486-33 W/64K (2 SLOTS LOCAL BUS)	415	595	386SX-25	91	271	

BASIC SYSTEM INCLUDES: 486/386/286 Motherboard • 486/386/286 CPU • 1 MB RAM • 101 Keyboard • 1.2 MB or 1.44 MB Floppy Drive • Baby AT or Mini Tower Case with Power Supply • 2FDD & 2HDD Controller Card w/Cable

1 YEAR WARRANTY PARTS & LABOR ON SYSTEMS

MOTHERBOARDS W/O CPU

EISA	
486DX2-66, DX2-50, DX-50, DX-33 W/64K & 3 SLOTS LOCAL BUS	\$427
ISA	
486DX2-66, DX2-50, DX-50, DX-33 W/64K, & 3 SLOTS LOCAL BUS	\$204
486-33 W/256K, 2 SLOTS LOCAL BUS	149
486-33 W/64K, 2 SLOTS LOCAL BUS	119
486-50 W/256K	141
486-50 W/64K	110
486-33 W/256K	136
486-33 W/64K	106
486 & 386 W/128K	121
386-33 W/64K	95
386-33 W/64K	94
386-25 NO CACHE	83
386SX-33	94
386SX-16	84
286-20	59
286-12	55

CASES

Baby AT Case w/200W PS	\$52
Mini Tower Case w/200W PS	52
Big Tower Case w/230W PS	99
Mid Tower Case w/230W PS	78
Super Tower Case w/250W 2 Fans	154
Slim Case w/PS	75

VIDEO CARDS

MGP Card	\$10
Diamond Stealth 1 MB VL VGA	163
Orchid Fahrenheit	198
VGA 800 x 600 256K	25
VGA 1024 x 768 512K	35
VGA 1024 x 768 1 MB	53
VGA Tseng Lab 1024x768 1 MB Hi-Color	89
ProDesigner IIsi Hi-Color	120

MONITORS

Mono 12"	\$71
Mono 14"	86
SVGA 14" .39	218
SVGA .28	249
SVGA .28 Non Interface	297
ViewSonic 6E	335
ViewSonic 6FS 15"	619
ViewSonic 7 17" .28	1020
ViewSonic 8 20" .25	1570
NEC 3FGX 15"	649
NEC 4FGX 16"	745
NEC 5FGX 17"	1350
SONY 1304	549
SONY 1604 16"	1019

RAM

4 MB-60ns Simm	\$129
4 MB-70 Simm	125
1 MB-60	35
1 MB-70	32
256K 70 Simm	10

CALL FOR CPU, MATH COPROCESSOR PRICE

FLOPPY & HARD DRIVES

*Floppy Drives	
Teac 2.88 MB FDD	\$89
Teac 1.2 MB FDD	54
Teac 1.44 MB FDD	48

CONNER

CP3000 42 MB 28ms	\$135
CP30064H 60 MB 19ms	179
CP30084E 85 MB 19ms	183
CP30104H 120 MB 19ms	239
CP30174 174 MB 17ms	268
CP3204F 212 MB 16ms	359

MAXTOR

7080A 80 MB 17ms	\$179
7120A 130 MB 15ms	244

7213A 213 MB 15ms	349
LXT 340A 340 MB 15ms	575
LXT 213SY 213 MB 15ms SCSI	418
LXT 340S 340 MB 15ms SCSI	611
XT 8760S 675 MB 16ms SCSI	1070
XT 8760E 676 MB 14ms ESDI	1078
PO-12S 1.02 GB 13ms SCSI	1452
PI-17S 1.5 GB 13ms SCSI	1716

FUJITSU

ESDI	\$131
M2623FA 425 MB	924
M2624FA 520 MB	934
M2266SA 1.2 GB	1650
M2652SN 2 GB	2570

CONTROLLER CARDS

MFM MB 1:1	\$36
IDE 2 FDD/2 HDD 1:1	12
IDE VL 2 FDD/2 HDD 1:1	58
SCSI Controller	59
SCSI Ultra 24F (EISA) Future Domain	440
SCSI Ultra 14F	210
SCSI DTC 3290 AS (EISA)	
w/512K cache up to 4 MB	499
SCSI DTC 3280K	129
SCSI Adaptec AD 1742K (EISA)	475
SCSI Adaptec AD 1542B	255
Promise PM-20440 (SCSI)	
w/o Cache up to 16MB	258

MODEM CARDS

2400 Int/Ext Modem	\$35/88
2400 MNP5 External	101
9600 Internal Modem	170
9600 External Modem	275
9600 Fax/2400 Modem	56

KEYBOARD/MOUSE

101 Keyboard	\$22
101 Click	24

Keytronic Keyboard	33
Track Ball 101 K	67
Logitech Mouseman	62

MISCELLANEOUS

Mouse	\$12
Super I/O	15
AT I/O Card (2S/1P/1G)	10
MS DOS 5.0	35
Windows 3.01	35
120 MB Colorado Tape Back-up	187
Tape	19
Tape Back-Up 120MB	
Controller Card AB10	69
250 MB Colorado Tape Back-Up	237
Archive 250 MB Tape Back-Up	199
Tape	24
Tape Back-Up 250MB	
Controller Card FC10	99
Tape Back-Up 250MB	
Controller Card TC15	189
Sony 535 CD-ROM (600 MB)	379
NEC CD-ROM	499
Diskette Box	7
Power Center	15

NETWORK

ETHERWARE LAN CARDS	
EtherPerfect EP-301	\$130
NE 2000 16-Bit	67
NE 1000 8-Bit	66
ARCNET LAN CARDS	
16 Bit	\$58
8 Bit	43

SCANNER

ScanPlus Full Page	\$399
ScanPlus Full Page Color	915
Grey Scale w/OCR	660
Grey Scale w/o OCR	610

W ENTEK Computer

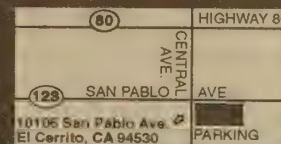
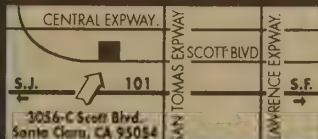
(408) 727-4362

Fax: (408) 727-5528
3056-C Scott Blvd.
Santa Clara, CA 95054

MON-FRI: 8:30-6PM
SAT: 10-6PM

(510) 524-0312

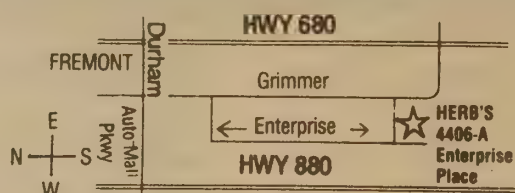
Fax: (510) 524-1534
10106 San Pablo Ave.
El Cerrito, CA 94530



Prices subject to change w/o notice. Cash • Cashier's Check • Money Order. Personal Checks from Bay Area Only!

COUPON

TO THE THOUSANDS OF PEOPLE WHO HAVE TRIED TO FIND HERB'S HERE'S AN EASY TO FOLLOW MAP...



LOOK FOR A ROW OF TAN WAREHOUSES NOT RETAIL STORES.

AND, HERE'S A FREE GIFT

FREE DISKFILE (3 1/2" OR 5 1/4")



Come in and present this coupon for a **FREE** clear plastic disk file (reg \$2.50 value). By redeeming this coupon you promise that you have attempted to find **HERB'S** at least one time without success! Once you have done so, we'll know you know the way to the Bay Area's best software buys.

Limit 1 coupon per family please. Expires March 1, 1993



FINDING HERB'S MAY NOT BE THE EASIEST THING IN THE WORLD, BUT IT'S WELL WORTH THE EFFORT AS HUNDREDS OF CUSTOMERS WILL ATTEST TO. COME ON...GIVE IT ANOTHER TRY. WE HOPE YOU'LL BE GLAD YOU DID.



HERB'S SOFTWARE CLEARANCE CENTER 4406-A ENTERPRISE PLACE, FREMONT

(510) 490-6335 OPEN MON-SAT 10am-6pm Sun Noon-4pm

AUTOCAD

AT The only Autodesk Training Center™ in San Francisco

SF STATE



AUTODESK
TRAINING CENTER

MS DOS for CAD; Intro and Intermediate AutoCAD; Customizing; 3D Features; AutoLISP; Animator Pro; 3D Studio; ASG Architectural; Softdesk AdCADD CIVIL; Solid Modelling with AME Release 2



New Downtown Center
425 Market Street
Opens February 8

New classes start weekly and monthly,
scheduled for weekdays, evenings and
weekends **Call (415) 338-1205**

RESOURCES

Calendar Of Events continued

March 17-18 Microsoft Project For Windows Class. San Francisco. Abacus Training. Call: (415)974-7200.

March 17-21 UNIX For Network Programming Course. Santa Clara. Bill Rieken. Call: (408)241-8319.

March 18 Beginning Word 2.0 For Windows Class. Emeryville. Northwest Computer Systems. Call: (510)653-0808.

March 19 Intro WordPerfect For Windows 5.1 Class. Emeryville. Northwest Computer Systems. Call: (510)653-0808.

March 19 Macintosh Network Administration Class. San Francisco. Abacus Training. Call: (415)974-7200.

March 20 Adobe Premier Class. San Francisco. Center for Electronic Art. Call: (415)956-6500.

March 20 Beginning Claris Works Class. Walnut Creek. New Horizons. Call: 1-800-999-6954.

March 20 Expert Systems Seminar: Productivity Tool Or Fantasy? San Francisco. UltraVision. Call: (415)863-8407.

March 20 How To Build Your Own 486 PC Computer For Under \$770 Class. Sacramento. American River College. Call: (707)484-8643.

March 20 IBM PC Clone Hardware Upgrade Seminar. Oakland. Excel Micro Solutions. Call: (510)836-2040.

March 20-21 NetWare System Administration Course 2. Oakland. MIS Services. Call: (510)208-5720.

March 21 Survey Of New Music And Audio Technologies Class. Santa Clara. UC Santa Cruz Extension. Call: (408)748-7375.

March 22 Beginning Word (For Macintosh) Class. Walnut Creek. New Horizons. Call: 1-800-999-6954.

March 22 HyperCard Intro Class. San Jose. Abacus Training. Call: (415)974-7200.

March 22-23 PC Repair Workshop. Oakland. Excel Micro Solutions. Call: (510)836-2040.

March 23 Access Class. Walnut Creek. New Horizons. Call: 1-800-999-6954.

March 23 Beginning PowerPoint Class. San Francisco. New Horizons. Call: 1-800-999-6954.

March 23 Intermediate Quattro Pro 3.0/4.0 Class. Emeryville. Northwest Computer Systems. Call: (510)653-0808.

March 23-24 CorelDraw Seminar. Concord. Altman Associates. Call: (408)252-5448.

March 24 Beginning Approach Class. Walnut Creek. New Horizons. Call: 1-800-999-6954.

March 24-25 4th Dimension Class. San Jose. Abacus Training. Call: (415)974-7200.

March 24-25 CorelDraw Class. San Francisco. Abacus Training. Call: (415)974-7200.

March 24-26 NetWare 386 Administration (v3.1 & v3.11) Class. San Francisco. Abacus Training. Call: (415)974-7200.

March 25 Beginning QuarkXPress Class. Walnut Creek. New Horizons. Call: 1-800-999-6954.

March 25 Intermediate Word (For Macintosh) Class. San Francisco. New Horizons. Call: 1-800-999-6954.

March 25-26 HyperCard Stack Development Class. San Francisco. Abacus Training. Call: (415)974-7200.

March 25-26 Local Area Networks: LANtastic To Novell Workshop. Oakland. Excel Micro Solutions. Call: (510)836-2040. ■

Save Time And \$\$ At MarketPro Shows

The COMPUTER

Products SUPERSTORE

Show & Sale

At Your Door

10-5pm Adm. \$6
FREE W/Mbrshp.

Sun. Feb. 7 - SANTA ROSA Sonoma Co. Fairgrounds	Sat. Feb. 20 VALLEJO Solano Co. Fairgrounds	Sun. Feb. 28 - SACRAMENTO Scottish Rite Center
Sun. Feb. 14 - SAN RAFAEL Marin Civic Center	Sun. Feb. 21 - HAYWARD Centennial Hall	Sun. Mar. 7 - SANTA ROSA Sonoma Co. Fairgrounds

1 Year Membership \$25 - 2 Year Membership \$35 Hardware, Software, & Peripherals

Membership entitles you to FREE Adm. to over 80 shows a Yr. in CA. Other locations in Calendar of events or call MarketPro for Other locations (415)388-8893

Save Up to 90%

Highest Quality • Huge Selection
The latest Computer Equipment
Friendly, knowledgeable people

Don't Pay Retail \$\$ For Your Computer Needs!

486DX/33MHz/64k
\$449

ANNIVERSARY SALE

Special Price at our
Palo Alto Center

BASIC SYSTEMS

386SX-16/25/33 MHz \$279/309/319

386DX-33/40 MHz

w/64K Cache \$355/369

486DX-33/50 MHz

w/64K Cache \$699/999

LOCAL BUS 486DX 33/50

w/64K Cache \$799/1019

EISA 486-50 w/256K Cache \$1239

BASIC SYSTEMS INCLUDE:

- Motherboard
- CPU
- 1 MB RAM
- 1:1 2HD/2FD Controller
- 1.2 or 1.44MB floppy drive
- Internal Clock/Calendar
- Math Co-Processor Socket
- Case
- Power Supply
- 101-key keyboard
- Mini Tower

COMPUTER SYSTEM	IDE HARD DRIVE 80MB 120MB 210MB	SYSTEM CONFIGURATION
486DX50/256K	\$1489 \$1569 \$1689	•4MB RAM •1.44 TEAC
486DX33/128K	1279 1365 1485	•1.2 TEAC •Minitower
486SX25/64K	1089 1179 1299	•200 w/PS •101 Keyboard
386DX33/128K	969 1065 1189	•IDE 2FD, 2HD •SVGA .28
386DX40/128K	989 1089 1209	Monitor •2S, 1P, 1G

VESA LOCAL BUS

486DX33/256K

\$1629

486DX50/256K

\$1839



Multimedia Solution for PC \$549

- Internal CD-ROM, Sound Blaster Pro, MIDI Kit
- Software Includes: Microsoft Windows 3.1
Microsoft Works for Windows
Microsoft Bookshelf
Creative Sounds
Software Library
Holmes Consulting Detective

CREATIVE
CREATIVE LABS, INC.

Video Blaster \$379

- Video Capture • Graphics Overlay • Video in a Window

- ▲ Build your own computer or have us build it for you
- ▲ Upgrade and repair your own computer at our centers
- ▲ One year warranty on all parts and labor
- ▲ We offer the best quality, best service and lowest prices

MOTHERBOARD

486DX/50/256K EISA-USA \$989
VL BUS 486DX-50 799
486DX/50/256K 689
486DX/33/64K Cache 460
486SX/25/64K Cache 260
386DX/40/64K Cache 184
386DX/33/64K Cache 179
VESA LOCAL BUS 486/33/256K 580
Other CALL

- 100% Financing with 90 Day Free Interest
- Accept Visa and Mastercard
- Price Subject to Change without Notice
- Dealer Inquiries Welcome
- Not Responsible for Typographical Errors

MONITOR

SVGA (1024x768) .28 \$270
SVGA (1024x768) .39 218
SVGA Viewsonic 4E 310
SVGA Viewsonic 5+ 419
SVGA Non-Int .28 310
SVGA Viewsonic 6FS 609
SVGA Viewsonic 7 999
SVGA Sony 1604 .26 999
MAG 15F/17F 599/1139
NEC 3FG/4FG 649/749

VIDEOCARD

Trident 512K \$45
Trident 1MB 60
Tseng 4000 1MB 85
Speed Star w/1MB 135
Speed Star 24X 169
Pro Designer IIs 125
Fahrenheit 225
Diamond Stealth 225
Windows Accel. w/1MB 85

HARD DRIVES

1.2/1.44 Floppy \$58/49
40MB/80MB IDE 165/180
105MB/120MB IDE 230/260
170MB/212MB IDE 299/355
240MB/340MB IDE 465/625
425MB/540MB IDE 849/925
Tape Back Up 12/250MB 195/255

CONTROLLER

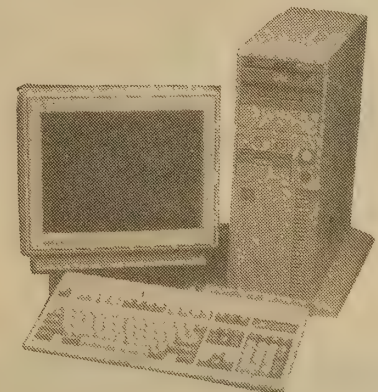
IDE w/IO (2S, 1P, 1G) \$22
IDE VL BUS 69
SCSI-2 VL BUS 310
MFM/RLL AT/AT 50/78
DTC SCSI 120
Bustek 32-bit SCSI 325

KEYBOARD

Lite on \$26
Keytronic USA 40
Maxi Switch 35
Omnikey 102/Ultra 68/99

MISCELLANEOUS

Mini Tower Case \$57
Medium Tower 99
Baby AT Case 79
Full Tower 135
Sound Blaster 95
Sound Blaster Pro Basic 159
Mitsumi CD-ROM 225
Sony CD ROM CDU 31A 299
CD Software CALL
1MB Simm 33
4MB Simm 135
Modem 2400 Baud 39
Fax/Modem 9600/2400 59
Microsoft Bus Mouse 75
Microsoft Serial Mouse 65
Printers CALL



COMTEK Computer



SELF SERVICE CENTERS

PALO ALTO

3527 El Camino Real
Palo Alto, CA 94306
(415) 424-8151
Open Sunday

DUBLIN

6602 Dublin Blvd.
Dublin, CA 94568
(510) 803-1530

SAN BRUNO

1778 El Camino Real
San Bruno, CA 94066
(Between Millbrae & San Bruno Ave.)
(415) 225-0153
Open Sunday

SANTA CLARA

5029 Stevens Creek Blvd.
Santa Clara, CA 95051
(408) 249-4297
Open Sunday



HOURS M-F 10AM-7PM • SAT & SUN 10AM-5PM

1=Memory Status			
	Total Memory	Total Available	Largest Available
Common Memory	30720	25994	25992
Conventional Memory	362K	355K	355K
Expanded Memory	8992K	8944K	0K

Fig. 4-3

your system, a task switcher can store programs as files on your hard disk. This is how the DOS shell task switcher works. When you switch back to the "stored" program, the task switcher swaps the currently active program to disk. The first program is poured back into conventional memory. With no expanded memory, this swapping process is laboriously slow; DOS must read and write all program information from the hard disk.

USING EXPANDED MEMORY WITH WINDOWS

Unlike DESQview, Window 3.0 requires EMS 4.0 compatible expanded memory, if you configure it for EMS uses at all. You cannot use EEMS or EMS 3.2 memory. In addition, Windows handles expanded memory differently than DESQview. Windows 3.0 will only use expanded memory in real mode. You must use extended memory with Windows if you run it in either standard or enhanced 386 mode. In Windows 3.1, real mode has been discontinued. You must use extended memory to gain more than 640K.

The second difference is the most important. When Windows 3.0 starts in real mode, it checks to see what type of memory your machine has available. If you have expanded memory available, Windows checks to see how much. It uses the small-frame EMS mode when you have little EMS memory available. This mode is most useful for running one large application. If your machine contains a lot of expanded memory, then Windows uses the large-frame EMS mode. This mode is most useful for running a few applications concurrently. Of course, each application receives less memory than in the small-frame EMS mode. You can force Windows 3.0 to use the small-frame EMS mode with a command line switch. In addition, other command line switches will determine how Windows distributes memory in the large-frame EMS mode.

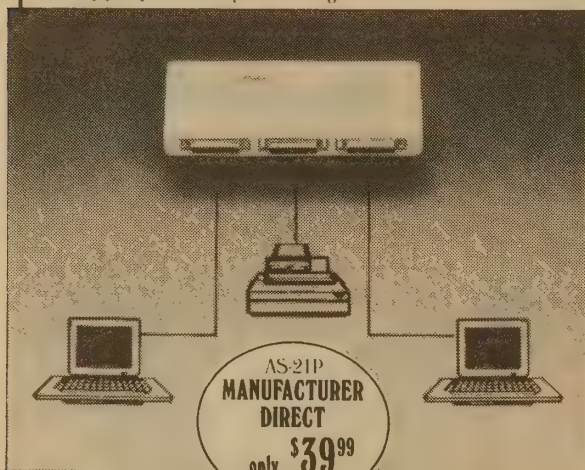
There is an easy method for determining the mode, type, and amount of memory available in Windows. Select the About option of the Help menu in the Program Manager. Windows will display a dialog box similar to the one shown in Fig. 4-4 for small-frame mode, or Fig. 4-5 for large-frame mode. Notice that in small-frame mode Windows that reports 0K of the EMS memory is used as "Free Memory" (conventional memory). All the available expanded memory is used for just that purpose. Now look at the large-frame mode display. Windows that reports 219K of EMS memory is being used as Free Memory. By starting Windows 3.0 with the /L parameter, you can change the amounts of memory used in each area. ■

STONY
THE PERFECT CHOICE

AUTOMATIC PRINTER SHARING MANUFACTURE DIRECT

2 COMPUTERS TO 1 PRINTER

Connect 2 terminals to the same printer for as low as \$19 per computer. And enjoy fully automated printer sharing.



4 COMPUTERS TO 1 PRINTER

Connect 4 terminals to 1 printer for less than \$18 per computer. Enjoy fully automated reliable printer sharing with absolutely no cable juggling.



ORDER NOW

Offer includes free printer stand
and cables.
Limited time only.

Buy direct from the manufacturer at tremendous savings. No dealer mark up, No middleman. No hidden costs. Stony has been manufacturing high quality printer sharing switches and other computer products internationally for a decade. Our direct market approach allows you to take advantage of wholesale prices without sacrificing quality or service. All of our print share switches come with a complete 1 year parts and labor warranty. And they come complete. There is nothing else to buy.

KEY FEATURES INCLUDE: • NO MORE CABLE JUGGLING

- FULLY AUTOMATIC
just plug in and use
- ALL INCLUSIVE
no additional parts to buy
- NO MOVING PARTS
nothing to break or loose
- RELIABLE
a decade of use—no bugs
- COMPACT AND STYLISH
durable beige plastic case, mountable anywhere
- COMPREHENSIVE WARRANTY
1 year parts and labor
- NO POWER REQUIRED
functions as a part of your system
- EASY TO INSTALL
just plug in and use
- SUPPORTS ALL PARALLEL PRINTERS
no compatibility problems—supports laser printers too
- HIGHEST QUALITY AVAILABLE
built with the best materials to assure long life
- LOW PRICE
don't get soaked!

**UNITED BUSINESS
MARKETING**

100 Ruby Lane, Vallejo, CA 94590-8193

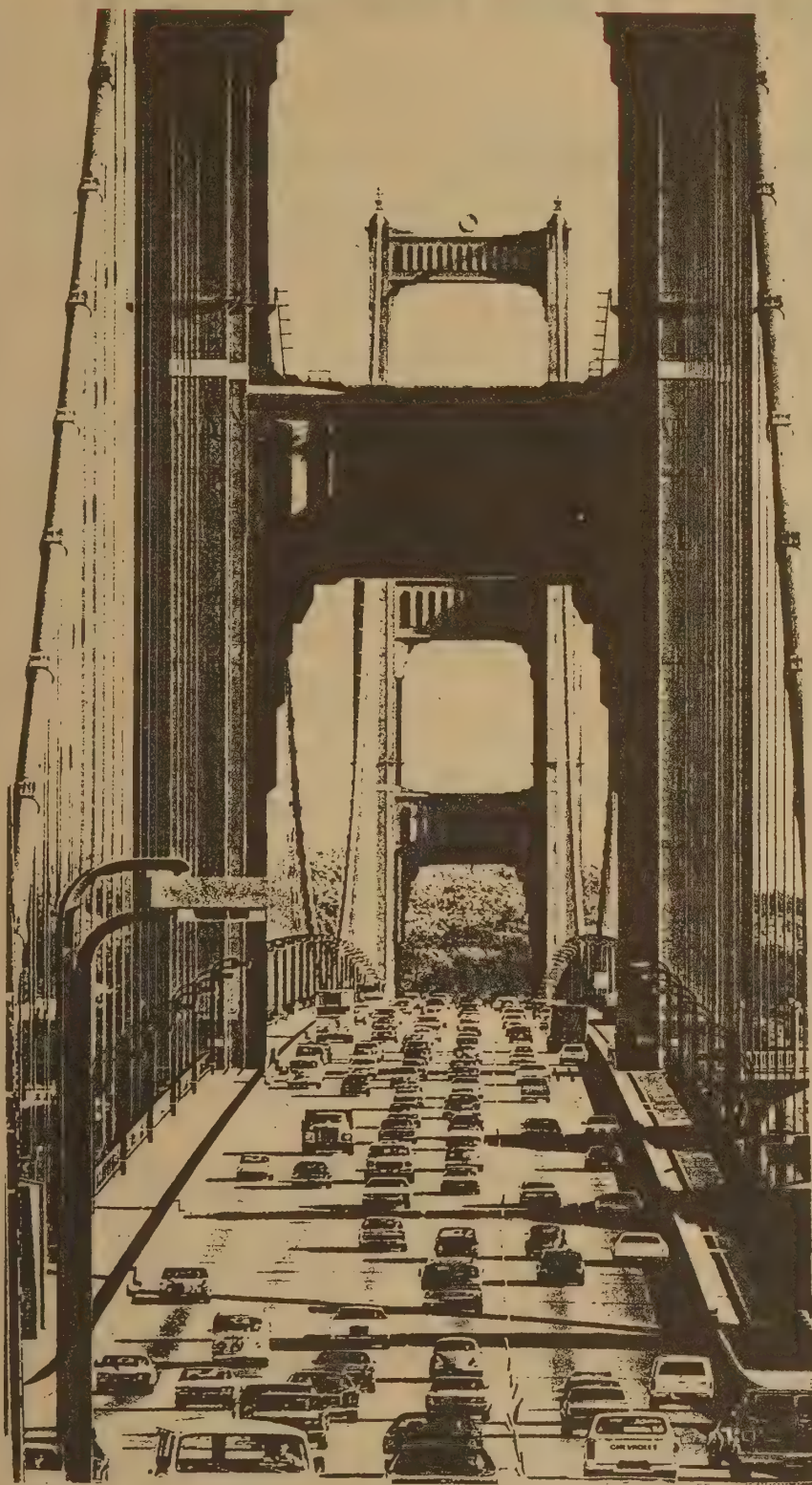
TEL: (707) 642-8342 • FAX: (707) 642-8645

DEALER
INQUIRIES
WELCOME.

incentive
programs
available

APPLE[®] EXPO WEST

Featuring the Entire Apple and Macintosh family of Products and Services



In conjunction with BMUG (Berkeley Macintosh Users Group),
this is your only opportunity learn, educate and explore
many products and services.

APRIL 23-25, 1993
SAN FRANCISCO
BROOKS HALL

*The event for Educators, Consumers,
and Small Business !*

For more information on attending or exhibiting the *most cost effective event* for the entire family of Apple and Macintosh Computer products and services *call*:

1-800-955-6630

617-784-4531 in Mass.

FAX 617-784-1830

THREE DAYS

of learning and understanding....

SEE for yourself what the newest software can do for your computer.

HEAR the latest on new technology from the experts in the industry.

TOUCH the incredible power of the entire family of Apple Computers.

*Choose from hundreds of products and services
at special show prices!*

Partial List of Exhibitors as of 12/15; A+ Publishing, Adobe Systems, Aladdin Systems, Alltech Electronics, Altsys, ARS Nova Software, BMUG, Inc., Boston Computer Society, Bytes Of Learning, Claris Corporation, Compact Disc Services, Computer Covers Unlimited, Computer Literacy Press, Computown, Curriculum Product News, Discis Knowledge Research, Inc., Dreamworld Software, Econ Technologies, Educational Resources, FWB, Great Wave Software, Insignia Solutions, Intellimation, IntelliTools, Interplay Productions, Learning Services, LRO Computer Sales, MacAcadamy, Madson Line, Microtech International, MicroTimes, Nada Chair, National Instruments, NAUG, Nisus Software, Parsons Engineering, Personal Training Systems, Prodigy, Quality Computers, Roger Wagner Publishing, Scholastic Inc., Sequential Systems, Seven Hills Software, Silicon Sports, Simplexity Software, Softdisk Publishing, Sumeria Inc., Survivor Software, TGS Systems, The ARC, Thunderware, Ventura Educational Publishing, Vision Software, Wings for Learning, and more coming in daily!

☐ **YES**, I'm interested in attending and want to **SAVE \$5.00 OFF** each registration with the early bird discount.

Early bird preregistration **only \$15.00** per ticket (includes all conferences) Onsite price \$20.00. (cash only)

Name _____

Quantity _____ Amount Enclosed _____

Company Name _____

☐ Check Enclosed ☐ Money Order

Address _____

Send this form and payment before March 20th to:

City _____ State _____ Zip _____

EVENT SPECIALISTS

Phone () _____

17 LILAC ROAD

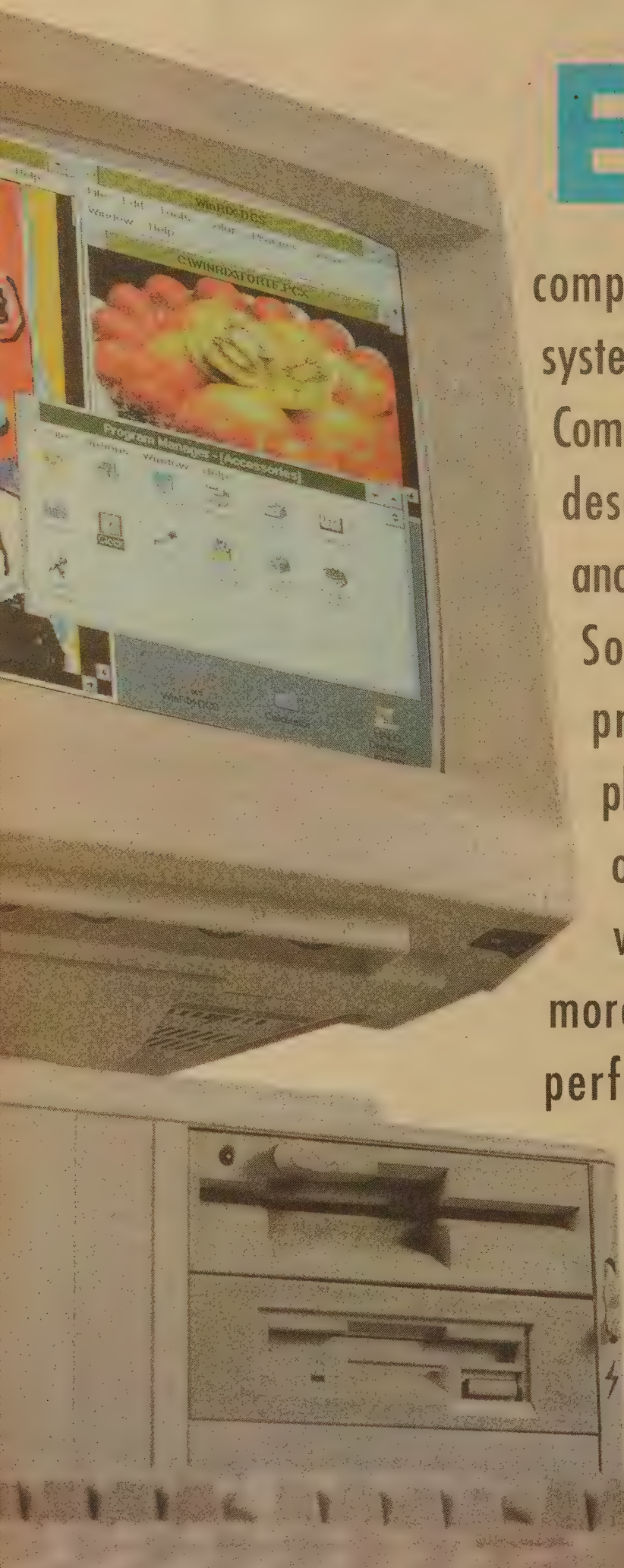
SHARON, MA 02067

☐ **YES**, Send me exhibitor information ASAP, booth space is selling quickly!

CALL EVENT SPECIALISTS 617-784-4531 FAX 617-784-1830

Apple, Macintosh are registered trademarks of Apple Computer, Inc. The Apple Expo are not affiliated with Apple Computer

YOU WILL NEVER BE ALONE WITH HD SYSTEM



Experience an amazing commitment to customer service and support. This is what makes the difference between HD computer and other vendors? Compare HD systems to the competition, you will see why Computer Shopper **COMPUTER SHOPPER** (June 1991) described HD systems as "definitely not another run of the mill machine". And why PC Sources, **PC Sources** (March 1991) praised its "brand name components, plentiful room for expansion, ample setup options, and generous service policies." And why Computer Shopper (June 1991) said "more experienced users searching for top performance might want to consider HD systems." The judgement is in. If you are looking for the best investment for your money, HD computer is the choice.

Buy HD... for the value

High Quality : Every HD computer is built to the highest standards of quality. First, We integrate our systems with high quality brand name components from reliable and well known manufacturers. Additionally, to ensure their highest quality and dependability, all our systems must undergo 72 hour burn-in tests before shipping. Our highly trained technicians will assemble every system according to stringent quality guidelines to make sure that your HD system will arrive in top shape right out of the shipping box.

Cost Efficiency : You could pay more for features that will not improve your overall performance. Our products are competitively priced based on configurations guaranteed to run standard or customized applications as we do not load unnecessary costs of software or hardware on our customers. We encourage your inquiry on our product packages -- from features, benefits and details to costs. We believe you should become a customer of our state-of-the-art systems and value packages

Solid Service : We firmly stand behind our products with the best service in the industry -- a comprehensive 1-year parts service and incredible Lifetime Labor warranty, FREE 365-Day-A-Year Technical Support, 30-Day Money-Back guarantee without restocking fee with no questions asked. That is why you find so many HD systems at the heart of critical installations in corporations, government and education. We are committed to provide you with the consistent support and service and to help you build your computing environment on a solid ground of dependable service and top-performance. Come and try us, We guarantee you are the best post-sale service with HD systems.

Solid Reputation : HD is the name you can trust. From its inception, HD has been progressing toward its ultimate goal -- to achieve total customer satisfaction. We pay mindful attention to the needs of our customers since customer satisfaction is critical to us. Our commitment is paying off : Both Computer Shopper (June 1991) and PC Sources (March 1991) recognized and highlight the fact that HD consistently delivers the best value to our customer.

Custom Configuration : You can have a system built in a way that meet your needs. Our professional sales representatives will custom configure systems to your specifications from our large list of options and upgrades. Our sales representatives are unique in the competitive PC industry. To help our customers determine their needs, they all attend weekly professional on-the-job training. They will offer you the best solutions based on their experience and hardware and software knowledge.

And More : We encourage you to try us. Examine our product performance and prove our excellent support. Just pick up your phone and call our technically oriented sales representatives. You will get our proof within 3 minutes.



Free Software Options :

For every system purchased over \$1000, you may choose one of the following free

Option 1- PFS:Window Works (For Windows)	Retail Value \$149
Option 2- PFS Publisher (For Windows)	Retail Value \$149
Option 3- PFS Business Plan (For Windows)	Retail Value \$129
Option 4- PFS Prospect (Dos Version)	Retail Value \$129
Option 5- PFS:First Choice (Dos Version)	Retail Value \$149



Top Performer for Window NT and File Servers

EISA VESA Local Bus

- 256K Cache Expandable to 512KB
- 8MB RAM Expandable to 64MB
- 1.2MB and 1.44MB Floppy Disk Drive
- 200MB 15MS SCSI Hard Disk
- EISA/VESA Local Bus 32-Bit EISA SCSI Controller
- 2 Serial, 1 Parallel, 1 Game Ports
- Focus 9000 Keyboard
- Full Tower Case with 250W Power Supply
- Build in Math Coprocessor
- 14" Viewsonic 6 Monitor 1024x768 .28 Dot Pitch
- 32 bit Orchid Fahrenheit 1280 Vlb w/1mb Vram
- 3-button Hi-res serial mouse
- MS-DOS 5.0
- Windows 3.1
- FREE SOFTWARE OPTION

Options:

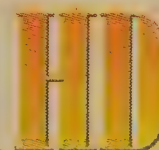
340MB SCSI Hard Disk	Add \$350
ATI Graphic Ultra Pro Vlb w/2MB Vram	Add \$350
15" Mag Svga Monitor 1280 x1024 .28	Add \$350
17" Viewsonic 7 Monitor 1280x1024 .28	Add \$750
RAM upgrade	\$35/MB

HD EISA VLB 486DX-33MHz	\$2595
HD EISA VLB 486DX2-50MHz	\$2695
HD EISA VLB 486DX-50MHz	\$2795
HD EISA VLB 486DX2-66MHz	\$2895

CORPORATE OFFICE: 1196 KERN AVE., SUNNYVALE, CA 94086 • TEL: (408) 720-0493 • FAX: (408) 720-1967

SACRAMENTO OFFICE: 2530 WATT AVE., SACRAMENTO, CA 95821 • TEL: (916) 483-4278 • FAX: (916) 483-4826

EL CERRITO OFFICE: 10005 SAN PABLO AVE., EL CERRITO, CA 94530 • TEL: (510) 528-0753 • FAX: (510) 528-0757



MON-FRI 7:30 TO 6:30 / SAT & SUN 10:00 TO 4:00

TECH SUPPORT - 1-800-676-0164 / MON-FRI 9:00 TO 6:00 / SAT & SUN 10:00 TO 4:00

OPTIONAL ON-SITE SERVICE AVAILABLE

C O M P U T E R

High Quality

Use quality parts and
name brand
components

Advanced quality
control 72 hours
burn-in

Satisfaction Guarantee

30 days full money
back guarantee No
restocking fee, no
questions asked

Great Service

lifetime labor, One year
parts Life time toll-free
technical support, open
7 days a week. One
year free on-site service
(Bay Area only)

Replacement parts
shipped via 2nd-day air
Custom Configuration

Best fit customers
specifications and
budget!

Solid Reputation

6 years In Business

Innovation System for Graphic Stations

HD VESA Local Bus

- 256K cache expandable to 512 KB
 - 4MB RAM Expandable to 32MB
 - 1.2MB and 1.44MB Floppy Disk Drive
 - 120MB 15MS IDE Hard Disk
 - IDE 2FL/2HD Disk Controller
 - 2 Serial, 1 Parallel 1 Game Port
 - 101-key enhanced keyboard
 - Mid-Tower Case w/ 230W Power Supply
 - Build-in Math Coprocessor
 - 14" Svga Non-interlaced monitor 1024x768.28 Dot Pitch
 - 32bit ET-4000Vib Svga Card w/1MB Vram
 - (64K Max colors, 1280x1024 Max Resolution)
 - 3-button Hi-Res Serial Mouse
 - MS-DOS 5.0
 - Windows 3.1
 - FREE SOFTWARE OPTION
- Options:**
- 200 MB Hard Disk Add \$150
 - 32Bit Local Bus IDE Controller Add \$100
 - 32Bit Orchid Fahrenheit 1280 VLB w/1MB Add \$50
 - 15" Mag SVGA Monitor 1280x1024.28 Add \$350
 - 17" Viewsonic 7 Monitor 1280x1024.28 Add \$800
 - RAM Upgrade \$35/MB
- HD VLB 486DX-33MHz \$1695**
HD VLB 486DX2-50MHz \$1795
HD VLB 486DX-50MHz \$1895
HD VLB 486DX2-66MHz \$1995



High Performance System for Windows and CAD Stations

486 ISA BUS

- 64K Cache Expandable to 512KB
 - 4MB RAM Expandable to 32MB
 - 1.2MB and 1.44MB Floppy Disk Drive
 - 120MB 15MS IDE Hard Disk
 - 1:1 Interleave 2FL/2HD Disk Controller
 - 2 Serial, 1 Parallel, 1 Game Port
 - 101-Key Enhanced Keyboard
 - Mini-Tower Case with 250W Power Supply
 - Build-in Math Coprocessor
 - 14" SVGA Non-Interlaced Monitor 1024x768 .28 dot pitch
 - Windows Accelerator Card w/1MB Vram
 - 3-button Hi-Res Serial Mouse
 - MS DOS 5.0
 - Windows 3.1
 - FREE SOFTWARE OPTION
- Options:**
- 256K Cache Add \$50
 - 200MB 15 MS Hard Disk Add \$150
 - Orchid Fahrenheit 1280 VA w/1MB Vram Add \$150
 - Diamond Stealth SVGA w/1MB Vram Add \$150
 - 14" Viewsonic 6 monitor NL28 Add \$60
 - RAM upgrade \$35/MB
- HD ISA 486DX-33MHz \$1545**
HD ISA 486DX2-50MHz \$1645
HD ISA 486DX-50MHz \$1745
HD ISA 486DX2-66MHz \$1845



Affordable System for Business and Home Users

486SX and 386 ISA BUS

- 4 MB RAM Expandable to 32MB
 - 1.2MB and 1.44MB Floppy Disk Drive
 - 120MB 16MS IDE Hard Disk
 - 1:1 Interleave 2FL/2HD Disk Controller
 - 2 Serial, 1 Parallel, 1 Game Ports
 - 101-Key Enhanced Keyboard
 - Mini-Tower Case w/200W Power Supply
 - 14" SVGA Monitor 1024x768 .28 Dot Pitch
 - 16-bit SVGA Card 1024x768 w/ 1MB
 - 3-button Hi-Res Serial Mouse
 - MD-DOS 5.0
 - Windows 3.1
 - FREE SOFTWARE OPTION
- Options:**
- 200MB 15MS Hard Disk Add \$150
 - Diamond Speedster 24X w/ 1MB Add \$100
 - 14" SVGA Non-interlaced monitor .28 Add \$50
 - Viewsonic 6 monitor Add \$100
 - RAM Upgrade \$35/MB
- HD 486SX-25MHz 64K Cache \$1295**
HD 386DX-40MHz 64K Cache \$1195
HD 386DX-33MHz 64K Cache \$1195

Terms and Conditions:

- 30 days money back guarantee
- Shipping charge not refundable
- 1 year parts, lifetime labor warranty
- Toll free, 7 days a week lifetime technical support
- Major credit cards accepted
- No surcharge for VISA, MC and Discovery cards
- Quality PO's accepted from Academic, Corporate and Public Institutions.
- APO's welcome
- Prices and specifications Subject to change without notice
- Toll free within United States only



UPS

FOR OVERSEAS CUSTOMER

Pay By Credit Card

Credit Card Holder Name

Billing Address.....

Bank PH #.....

Credit Card #.....

Exp. Date

For wire transfer please call for
detail bank information

Ideal Systems for Students and As Gifts

386SX ISA BUS

- 2MB RAM Expandable to 32MB
- 1.2MB and 1.44MB Floppy Disk Drive
- 80MB 18MS IDE Hard Disk
- 1:1 Interleave 2FI/2HD Disk Controller
- 2 Serial, 1 Parallel, 1 Game Port
- 101-Key Enhanced Keyboard
- Mini-Tower Case w/ 200W Power Supply
- 14" SVGA Monitor 640X480.39 Dot pitch
- 16bit SVGA card w/256KB
- 3-button hi-res serial mouse
- MS-DOS 5.0
- FREE SOFTWARE OPTION

Options:

- 120MB 18MS Hard Disk
- 14" SVGA 1024x 768 Monitor/1MB Card
- Windows 3.1
- RAM Upgrade

HD 386SX-33MHz

HD 386SX-25MHz

Add \$100

Add \$100

Add \$45

\$35/MB

\$995

\$950



SOUND BLASTER MULTIMEDIA UPGRADE KIT

- Sound blaster pro card
- Internal CD-ROM drive
- Master disk with Microsoft Windows 3.1
- Software library CD-ROM package
 - Marcomind Action
 - Authorware Star
- Free CD-ROM Titles
 - Microsoft Bookshelf
 - Sherlock Holmes, consulting detective
 - Creative Sound
 - Microsoft works for windows
- Midi Kit

\$595



Corporate Office: 1196 Kern Ave., Sunnyvale, CA 94086 Tel:(408) 720-0493 • Fax (408)720-1967

Sacramento Office: 2530 Watt Ave., Sacramento, CA 95821 Tel: (916) 483-4278 • Fax (916) 483-4826

El Cerrito Office:10005 San Pablo Ave.,El Cerrito, CA 94530 Tel: (510) 528-0753 • Fax (510) 528-0757

HD

C O M P U T E R

Mon-Fri 7:30 to 6:30 / Sat & Sun 10:00 to 4:00

TECH SUPPORT - 1-800-676-0164 / Mon - Fri 9:00 to 6:00/ Sat & Sun 10:00 to 4:00

OPTIONAL ON-SITE SERVICE AVAILABLE

USER GROUP NETWORK

BULLETIN BOARDS

RESOURCE LISTING CHANGES

As electronic bulletin boards continue growing, system operators are adding phone lines that include additional area codes. Beginning with issue #100, *MicroTimes* introduced a "Multi-Zone" category for BBSes with access phone numbers in multiple area codes.

Thank you,
MicroTimes staff

MULTI-ZONE

Fantasy Network. (408)985-1529, (408)732-4908, (415)365-7002, (415)321-3661, (415)573-1063, (415)244-9218, (415)928-4781, (510)797-4101. 24 hrs., Multiuser, interactive D&D style fantasy adventure game. Chatting, 8 nodes. [Exp. #107.]

First Online. (408)247-1717, (415)598-0398, (415)992-3780, (510)254-5455. Over 30,000 files, 4.2GB, PC-SIG library, adult files. PC and compatibles. [Exp. #105.]

HoloNet Internet Access BBS. (510)704-1058; call for other nationwide numbers. 8-N-1, 24 hrs., 1200/2400/9600/14,400. Internet: telnet, FTP, IRC, MUDs. 3500+ Usenet groups. Free demo. [Exp. #107.]

Interactions BBS. (408)258-8913, (415)469-5510, (510)832-0560, with numbers from Richmond to Fremont. 12-lines, friendly chat (over 18 only), two-week free trial. Sysop: C. Watson. [Exp. #107.]

Lambda. (415)572-2591, 755-9439, (510)268-9891. Adult, gay/lesbian, all are welcome. Email, chat, matching. Free. [Exp. #106.]

Phosphor BBS. (408)259-0369, (510)794-6401, (510)794-2808. Multiplayer games, files, 14 lines of chat, MNP5/V.42bis. Sysop: Glenn Sanders. [Exp. #105.]

Portal Communications. (408)725-0561, (300-2400); (408)973-8091, (9600-57,600); (415)965-8059; (300-57,600). Worldwide X.25 online, shell, BBS & UUCP connections. Voice: (408)973-9111. [Exp. #107.]

Pro-Line BBS. (408)226-3880, (415)390-0763, (510)357-2637. 24 hrs., 22 lines, chat, lrg. library, jobs online, matchmaker, and more. [Exp. #105.]

Public Domain Software Exchange. (415)571-6911, (707)444-9203. 8-N-1, 24 hrs., 1200/2400. Multiple message areas, large file library, chat, two lines. [Exp. #106.]

The Road Not Taken. (415)206-1638, (510)848-5248. Active message bases, friendly. Free. [Exp. #106.]

209

BerthaBoard. (209)823-0093. 1200-14,400 V.32. Three lines, 4.5GB, 65,000 files, lrg. msg. base. [Exp. #106.]

Pacific BBS. (209)962-4045. 1200-38,400. Adults only—over 5000 adult files, electronic graffiti, and games. Sysop: Ed Peterson. [Exp. #105.]

408

24-Hours-a-Day BBS. (408)448-1126. 24 hrs., 300/1200/2400/9600/14,400. 12 Step Recovery Programs, echo mail, shareware, psychological files. Sysop: Mike R. [Exp. #105.]

A32 Macintosh User Group BBS. (408)263-0299. 24 hrs., 2400. Second sight, members only. Voice: (408)263-0398. [Exp. #106.]

Amateur Action BBS. (408)263-3393. 8-N-1, 1200/2400/9600. 100% Adult Amateur GIF files, eight lines. [Exp. #107.]

Amiga (The Dungeon) BBS. (408)384-6370. 24 hrs., 1200/2400. Games, files, info on Amiga viruses, some IBM files. Sysop: Garnett Sanders. [Exp. #106.]

Apple Byte GS. (408)578-3201. 24 hrs., 1200/2400/9600/14,400. Apple II Support BBS, member FVNet, running Metal/FutureVision, 685MB. Free. Sysop: Jim Buchanan. [Exp. #107.]

Atlantis BBS. (408)377-8510. 8-N-1, 24 hrs., 2400. Major BBS, multiplayer games and door games. Free limited demo accounts. Subscription: 25¢/hr. [Exp. #107.]

Bare Bones BBS. (408)272-2173. 8-N-1, 24 hrs., 9600. Two lines, Mac file transfers. Free, instant validation. Sysop: L'il John. [Exp. #106.]

Bay Area Atari User Group (BAAUG) BBS. (408)986-0215. 8-N-1, 24 hrs., 300/1200/2400. [Exp. #105.]

BayNar-Net. (408)926-8547. 24 hrs., 2400. Model rocketry, astronomy, Ham, kids. Family oriented, NAR affiliated. Sysop: Phil Hayton. [Exp. #107.]

The Beggar's Tomb. (408)243-TOMB. GIFs, stories, and animation for adult orientations. Sysop: The Grim Reaper. [Exp. #107.]

Blue Caller BBS. (408)379-0547. 2400. Dedicated to the working class. Friendly and free. Sysop: Bob Baker. [Exp. #107.]

Blue Smoke BBS. (408)265-4600, 269-4127. 8500+ files on CD-ROM, Fido, monthly online game contests. Sysop: Masque. [Exp. #106.]

Bluemaxx BBS. (408)229-9597. 14,400. 7000 XXX GIF txt files, \$9.99. Sysop: Ripper Jim. [Exp. #105.]

board8. (408)338-7052, 338-7954. 24 hrs. Full network news and worldwide mail via UUCP. Free. [Exp. #107.]

Bootleg CD-ROM BBS. (408)226-9597. 14,400. Huge ratio, 10,000 files. Free access. Sysop: Ripper Jim. [Exp. #105.]

Burn This Flag. (408)363-9766. 1200/2400/9600/14,400. Esoteric text files and a message system for closet luddites. No fee. [Exp. #107.]

CAD Solutions BBS. (408)366-1009. 1200/2400/9600/14,400. Multiline, CAM software for today's PCB industry. Sysop: Jeff Miller. [Exp. #105.]

Careers Online. (408)248-7029. 1200/2400/9600/14,400. Online job listing, resume fax service. Free to all. [Exp. #106.]

CBORN. (408)262-7876. 8-N-1, 1200/2400. Classified business opportunity research net. Sysop: Leo Bert. [Exp. #106.]

Creative Labs, Inc. BBS. (408)428-6660. 8-N-1, 1200/2400/9600/14,400. Technical support BBS for Sound Blaster, Video Blaster, and other Creative Labs products. Sysop: Bob Hogg. [Exp. #105.]

Cruzio. (408)423-9995. 8-N-1, 1200/2400/9600. Santa Cruz county email, USENET and scrutz newsgroups, databases, files, MUD/chat. Sysop: Peggy Dolgenos. [Exp. #106.]

The Dark Side. (408)245-SPAM. 24 hrs. Free access to Usenet and UUCP mail. Since 1985. Internet: darkside.com. [Exp. #105.]

Dating Tree BBS. (408)946-1431. 16 lines, online chat, email, matchmaking, and more. Since 1988. Sysop: Ima Ghnome. [Exp. #107.]

DC-To-Light. (408)262-5150. 8-N-1, 24 hrs., 300/1200/2400/9600. MS-DOS, CAD, UNIX, WIN, LAN & HAM: Conferences and email. Sysop: Fred Townsend. [Exp. #107.]

The Electric Pages. (408)253-4280. 300/1200/2400. Commercial and private advertising. Select by category or key words. Voice: (408)253-1709. Sysop: Contemporary Communications, Inc. [Exp. #107.]

Escape To Other Worlds BBS. (408)956-1750. 8-N-1, 1200/2400/9600/14,400. Threelines, SF, fantasy, comics, games, msgs. Mac and PC GIFs. [Exp. #105.]

Fun Seekers. (408)379-0958, 379-9680. 8-N-1, 24 hrs., IBM utils, games, adult, Win, Mom, kids. Designed with the family in mind. [Exp. #106.]

Garlique Graphics. (408)847-
Continued

BAY AREA BBSes

By Kathleen Creighton

Windows Online

If you're a PC user actually using your copy of Microsoft Windows for something other than to play Windows Solitaire, take a look at Windows Online, a full-featured subscription board in Danville (510/736-8343, 2400 baud, 8-N-1, Frank Mahaney, sysop) specializing in Windows software.

Windows Online features over 900MB and twenty-eight directories of Windows files (over nine thousand files), most current and covering Windows v3.x. The board also carries a large number of DOS and OS/2 files. Subscription membership is required for most file downloads, except for the *Windows Online* weekly newsletter and monthly publication, *Review*, an electronic newsletter that is configured as a Windows help file and read under Windows itself. (Although the *WOL Review* is available for downloading at no charge, the .ZIP files themselves run around 500K. This is another BBS which almost demands a high-speed modem for efficient use, and Windows Online has fourteen incoming phone lines, all answered by high-speed modems.)

There are several local message areas for Windows discussion and tips (including participation by *Windows Online Review* staff members), along with over 650 echo message areas (ILink, RIME, Intelec, Smartnet networks), all available at no charge.

Four levels of subscriptions range from \$39 a year for the most basic "mail membership" with 100K per day download limit (not including mail upload/download via mail reader), to \$199 a year "super membership" with 5MB per day download limit. All members have the use of the voice technical support line.

Windows Online is well organized, and a solid resource for people intent on overcoming the mysteries of Windows. For BBS callers local to the Danville calling area, Windows Online provides a good variety of message areas and downloads at about the same or less cost than other subscription general-interest BBSes.

A Note About Modem Speeds

Dear Ms. Creighton:

First off, thank you very much for the write-up in the current issue [October 26] of *MicroTimes*. The information you provided on our network, *NIRVANAnet*, will help to attract more callers with the same bizarre, twisted point of view we have come to enjoy.

My only disappointment is that you listed my system as only 2400 baud. I have been using a V.32bis, 14,400 baud modem for the last three months. I only believe it to be important because many people who own higher-speed modems will only call systems that
Continued

Amateur Action BBS

Amateur Adult GIF Files!
Over 12,000 files on line!!
New Member Bonus!!
FREE Amateur Video!!



(408) 263-3393

8 Lines

US Robotics Dual Standard
Modem 1200/2400/9600
V.32/14400 HST

Best Prices! Best Quality! Best Service!

CALL FOR UPDATED PRICES

LAITRON COMPUTER WEEKLY SPECIALS

486-66/256K

- Diamond 2 VESA LB Board
- Intel 80486DX2-66 CPU w/fan
- AMI BIOS, C&T Chipset
- 8 MB RAM 70ns
- Teac 1.2 MB Floppy Drive
- Teac 1.44 MB Floppy Drive
- VESA Local Bus IDE
- AT I/O 2S/1P/1G
- Western Digital 212MB 14ms HD
- Northgate Omni-102 Keyboard
- Diamond Stealth VESA Local Bus
- Viewsonic 6FS 15" N-I Monitor
- Super Tower w/rollers & fan
- 300-Watt Power Supply

\$2590

486-66/256K

- Orchid 2 VESA Local Bus Board
- Intel 80486DX2-66 CPU w/fan
- AMI BIOS, OPTI Chipset
- 8 MB RAM 70ns
- Teac 1.2 MB Floppy Drive
- Teac 1.44 MB Floppy Drive
- VESA Local Bus IDE
- AT I/O 2S/1P/1G
- Western Digital 212MB 14ms HD
- Northgate Omni-102 Keyboard
- Orchid VA805 VESA Local Bus
- Viewsonic 6FS 15" N-I Monitor
- Super Tower w/rollers & fan
- 300-Watt Power Supply

\$2590

486-33/64K

- 2 VESA BUS BOARD
- Intel 80486DX-33 CPU
- AMI BIOS
- 4 MB RAM 70ns
- Teac 1.2 MB Floppy Drive
- Teac 1.44 MB Floppy Drive
- IDE/IO 2FD/2HD/2S/1P/1G
- 32-bit Local Bus
- Western Digital 212MB 14ms HD
- Mitsumi 101-key Keyboard
- VESA LOCAL BUS VIDEO 1MB
- 1024x768 .28dp SVGA Monitor
- Medium Tower Case
- 250-Watt Power Supply

\$1549

386-40/64K

- AMD 80386DX-40 CPU
- AMI BIOS & Math-Co Socket
- Internal Clock/Battery
- 4 MB RAM 70ns
- Teac 1.2 MB Floppy Drive
- Teac 1.44 MB Floppy Drive
- IDE 2FD/2HD Controller
- AT I/O 2S/1P/1G
- Maxtor 80MB 17ms HD
- Mitsumi 101-key Keyboard
- Trident SVGA with 512K
- 1024x768 .28dp SVGA Monitor
- Mini Tower Case
- 200-Watt Power Supply

\$949

HARD & FLOPPY DRIVES

Conner CP3000 40MB 25ms IDE.....	\$140
Conner CP30084E 80MB 18ms IDE.....	\$185
Conner CP30104 120MB 16ms IDE.....	\$244
Conner CP30174 170MB 16ms IDE.....	\$257
Conner CP3544 540MB 13ms IDE.....	\$840
Maxtor 7040AT 40MB IDE.....	\$129
Maxtor 7120AT 130MB 15ms IDE.....	\$235
Maxtor 7213AT 213MB IDE.....	\$335
Maxtor LXT340AT 340MB 15ms IDE.....	\$555
Maxtor LXT535A 535MB 12ms IDE.....	\$790
Quantum ELS127 127MB IDE.....	\$245
Quantum LPS240 240MB 15ms IDE.....	\$428
Quantum 420MB 13ms SCSI.....	\$800
TOSHIBA 877 MB 12.5ms SCSI.....	\$1055
Western Digital 212MB 14ms IDE.....	\$317
Western Digital 340MB 13ms IDE.....	\$508
TEAC 1.2MB/1.44MB Floppy.....	\$53/\$50

CONTROLLER CARDS

IDE 2FD/2HD.....	\$13
IDE 4FD/2HD.....	\$34
IDE 2FD/2HD/2S/1P/1G.....	\$15
ORCHID VESA Local Bus IDE.....	\$90
MFM 2FD/2HD.....	\$37
ADAPTEC 1522 SCSI.....	\$98
ADAPTEC 1542B SCSI Kit.....	\$239
ADAPTEC 1742 EISA SCSI.....	\$420
BUSTEK EISA SCSI.....	\$303
IDE Cache Controller.....	\$120
ULTRASTOR 12C SCSI w/1 MB.....	\$397
ULTRASTOR 24F EISA SCSI.....	\$438

MEMORY & MATH-CO

1 MB x9 SIMM 60ns.....	\$35
1 MB x9 SIMM 70ns.....	\$32
4 MB x9 SIMM 60ns.....	\$135
4 MB x9 SIMM 70ns.....	\$125
CYRIX 387DX-40/33/25.....	\$92/\$70/\$70
CYRIX 387SX-25/20/16.....	\$70
INTEL 80387DX-33/25.....	\$87
INTEL 80387SX-20/16.....	\$83

VIDEO CARDS

ATI Graphic Ultra Pro/Plus 2MB.....	\$398/\$298
ATI Graphic Ultra w/1 MB & Mouse.....	\$248
DIAMOND SpeedSTAR w/HC & 1 MB.....	\$125
SpeedSTAR 24 w/HC & 1 MB.....	\$140
SpeedSTAR 24X w/HC & 1 MB.....	\$147
DIAMOND Stealth 24/HC & 1 MB.....	\$157
DIAMOND Stealth 24 VESA.....	\$185
DIAMOND Pro VRAM 2MB.....	**\$call
Fahrenheit VA801 w/1 MB.....	**\$150
Fahrenheit VESA Local Bus w/1 MB.....	**\$195
ProDesigner IIS w/HC & 1 MB.....	**\$117
TRIDENT 256K/512K/1 MB.....	\$31/\$38/58
VIDEO 7 VRAM II Ergo w/HC & 1 MB.....	\$270

MOTHERBOARDS W/CPU

ORCHID 486DX2-66/256K w/2 VESA.....	\$880
ORCHID 486-50/256K w/2 VESA Bus.....	\$800
TYAN 486-50/33 /256K w/2 VESA Bus.....	\$485
NICE 486DX50/33 256K EISA.....	\$750/590
486DX-50/256K.....	\$605
486DX2-66/50 256K.....	\$695/555
DIAMOND 486DX2-66/256K.....	\$895
486DX-33/128K.....	\$430
486SX-25/128K.....	\$275
386DX-40/128K.....	\$169
386DX-33/64K.....	\$160
386DX-25.....	\$139
836SX-33.....	\$99

KEYBOARDS

Enhanced 101-key Keyboard.....	\$20
FOCUS 2001/5001 Keyboard.....	\$39/\$63
KEYTRONIC 101-key Keyboard.....	\$34
MAXISWITCH 101-key Keyboard.....	\$30
METEK K208 101-key Keyboard.....	\$22
METEK K104 Click Keyboard.....	\$42
MITSUMI 101-key Keyboard.....	\$26
NORTHGATE Omnikey 101/102.....	\$65
NORTHGATE Omnikey Ultra.....	\$87

** WITH SYSTEM PURCHASE ONLY

CASE & POWER SUPPLY

250W UL Listed Power Supply.....	\$69
300W UL Listed Power Supply.....	\$89
Desktop AT Case w/200W PS.....	\$59
Full-size Tower Case w/250W PS.....	\$117
Medium Tower Case w/250W PS.....	\$94
Mini Tower Case w/200W PS.....	\$65
Super Tower Case w/300W PS, 2 Fans.....	\$185

MISCELLANEOUS

2400/9600 Internal Modem.....	\$34/\$185
9600/2400 Internal Fax/Modem.....	\$53
14400/14400 Internal Fax/Modem.....	\$210
COLORADO DJ-10/DJ-20.....	\$175/\$227
LOGITECH First Mouse.....	\$35
LOGITECH Mouseman (Serial or Bus).....	\$60
LOGITECH Trackman.....	\$75
3-Button Mouse.....	\$13
MICROSOFT DOS 5.0/Windows 3.1.....	\$45
MICROSOFT Mouse.....	\$60

CD-ROM & SOUND CARD

CHINON SCSI CD-ROM w/card.....	\$390
NEC CD-ROM 84M/74M(280ms).....	\$550/\$630
SONY CD-ROM CDU535/541.....	\$326/\$426
MITSUMI CD-ROM(350ms).....	\$220
MEDIAVISION CDROM&SOUND.....	\$920
MEDIAVISION ProAudio Spectrum 16.....	\$185
CREATIVE LABS SoundBlaster.....	\$95
SoundBlaster Pro w/MIDI Kit.....	\$180
CREATIVE LABS CD-ROM&SOUND.....	\$400
TEXEL CD-ROM DM-3024(265ms).....	\$395
CD-ROM Software--6Titles.....	\$105

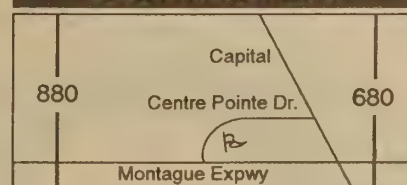
Terms & Conditions:

- Nationwide on-site service available
- Price and availability subject to change without notice
- Shipping, COD, & insurance are extra and not refundable
- Prices reflect cash discount
- All returns must have prior authorization
- All returns must be in original packaging complete with manual, software, . . . etc.
- Not responsible for typos on this ad

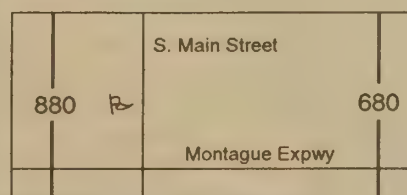
MONITORS

HITACHI CM-2085M+ (20").....	\$1295
MAG 15F/17F (15"/17", .26dp).....	\$565/\$1050
NANAO 9080I (16", .28dp).....	\$893
NANAO F550I/T560I (17").....	\$1020/\$1759
NEC 3FGX/4FG (15", .28dp).....	\$619/\$729
NEC 4D (16").....	\$565
NEC 5FG OEM/Original (17").....	\$1290/\$1390
SONY CPD-1304/1604.....	\$539/\$947
VIEWSONIC 4E/5E/5+.....	\$283/\$383/\$483
VIEWSONIC 6E/6FS.....	\$323/\$573
VIEWSONIC 7/8.....	\$963/\$1513
Mono 12"/14"/Mono VGA 14".....	\$73/\$92/\$117
VGA 14" .51dp.....	\$179
SVGA 14" .39dp/.28dp.....	\$209/\$249
SVGA 14" .28dp Non-Interlaced.....	\$279

LAITRON COMPUTER



1646 Centre Pointe Drive
Milpitas, CA 95035
Tel:(408)945-1411
Fax:(408)945-1075



1605 S. Main Street
Milpitas, CA 95035
Tel:(408)945-9540
Fax:(408)945-0225

0665. 24 hrs., 2400/9600. When only the best will do. [Exp. #105.]

Higher Powered BBS. (408)737-7040. 2400-16,800. Multiline, voted in Top 100 BBSes in World. Over 500!Link, RIME, SmartNet, Intelc, SFNet conferences. [Exp. #107.]

The Holodeck BBS. (408)248-0869. 1200/2400/9600/14,400. Online games, Fidonet, IBM files, and GIFs. Home of W&W Communication Doorware. [Exp. #106.]

InfoServe Connections. (408)243-2102. 8-N-1, 24 hrs., 2400. UUCP/Usenet/email for DOS, Mac, and 386/UNIX. Sysop: B. Oesterreich. [Exp. #106.]

International TeleText Communications, Inc., (ITC). (408)735-1803. [Exp. #107.]

The I/O Temple. (408)427-3453. 8-N-1, 1200-14,400. Msg bases, online games, and more. FidoNet 1:216/513. Sysop: Armand. [Exp. #106.]

The LaserBoard. (408)268-4863, 268-6323. 24 hrs., 14,400 RIME, local TNET, and Wildnet conferences. Call and download the latest file available and best service around. Free. Sysop: Shawn Higgin. [Exp. #106.]

Laser Light BBS. (408)496-0771. 8-N-1, 24 hrs., 2400/9600/14,400. IBM, best games in town! Apogee, EPIC, Moraff & MVP Release site. Sysop: Robert Mueller. [Exp. #105.]

Lynn-Western Newswires. (408)778-5994 & 778-9656. 8-N-1, 24 hrs., 1200/2400. FidoNet 1:143/304. Professional information on technology, management, and worldwide investment news. Stock market data online. [Exp. #106.]

Mail Stop. (408)257-1919. 8-

N-1, 24 hrs., 300/1200/2400. Free, private email and SIG system. Internet mailboxes avail. [Exp. #106.]

Monterey Gaming System. (408)655-5555. 300/1200/2400/9600. 16 lines, conferences, email, msgs., custom games. Free. [Exp. #106.]

Moose Is Loose BBS. (408)773-9573. Not many files but the silliest message base in Sunnyvale. Sysop: John Giever. [Exp. #106.]

Mountain Retreat. (408)335-4595. 2400-14,400. 660MB, Fidonet member, specialty Turbo Pascal. Sysop: John Jamieson. [Exp. #106.]

The Mud Hole BBS. (408)865-1621. 14,400. Great door games and messages. [Exp. #105.]

NightLog BBS. (408)655-1096, 655-8294. 24 hrs., 300-16,800. DOS, Windows, OS/2, adult files, 14 lines, 4.9GB. Sysop: Karl Van Lear. [Exp. #106.]

Night Watch BBS. (408)249-0805. 14,400. IBM. Free Access. Sysop: Carl Bacani. [Exp. #107.]

Pacific Exchange BBS. (408)946-8561. 12 lines and over 40,000 IBM files. Since 1986. [Exp. #107.]

Paradise City BBS. (408)280-6630. 8-N-1, 1200-57,600. New! Tons of files and doors. Free full access on first call. Sysop: Jim Reed. [Exp. #106.]

Positive Image Studio. (408)270-8996, 270-8916. 8-N-1, 24 hrs., 19,200. FirstClass software, 4GB files online, Mac & IBM software and util, adult graphics/animations. Member-ships avail. [Exp. #105.]

Ring Of Fire BBS. (408)739-8753 (2400), 739-8371 (9600).

BBS for United Sysop's Association and Silicon Valley Novell Users Group. Since 1983. Sysop: Bill Strouse. [Exp. #107.]

Ring Zero BBS. (408)720-8944. 24 hrs., 1200/2400/9600/14,400. The professional's information exchange. Free access. [Exp. #107.]

The Rising Storm. (408)739-8693. 8-N-1, 14,400. Emergency prep., firearms, politics, and more. Survival echos and files. Sysop: Kirk DeHaan. [Exp. #107.]

Salted Slug. (408)454-9368. Just say yes to the most active msg. system in Santa Cruz. NIRVANAnet. [Exp. #107.]

Second Generation BBS. (408)980-8830. Technical support and chat by New Dimensions. Sysop: Lou. [Exp. #107.]

The Shrine BBS. (408)747-0778. Magick, religions, and sex. Adult and women only areas by request. Free system. Sysops: Junell Zzz and Tom Zoch. [Exp. #107.]

CARLIQUE GRAPHICS
WORLD FAMOUS GIF'S
ADULT CD'S
FREE CATALOGS
SUBSCRIBE ON-LINE

MasterCard VISA AMEX

408-847-0665

INTELOG BBS

- 16 Nodes
- DOS • Windows
- OS2 • Adult Files
- Internet • Usenet
- Rime • ILink Email
- (408) 655-1096 2400 bps
- (408) 655-8294 v.32ba
- (408) 655-8297 USR HST

MasterCard VISA

PACIFIC EXCHANGE
"Full Featured BBS"

- 50,000 DOS/Window files
- 10,000 Adult Files
- 12 Incoming Data Lines
- USA Today News
- On-Line Shopping Mall
- Support to 38,400 bps
- User Interactive Games
- Teleconferencing
- 68 Different SIG's
- Classified Ads & More

Full Access - \$25/Year

MasterCard VISA

408 - 946 - 8561

The Silicon Connection. (408)492-9700. 24 hrs., 300/1200/2400. Electronic PenPal Network, 16 lines. [Exp. #107.]

Smorgasbord BBS. (408)722-9101. Aptos, Watsonville, Gilroy. 12,000 files, matchmaking, games, friendly. [Exp. #107.]

Spectral BBS. (408)443-8740, 443-9781. 24 hrs., 1200/2400/9600/14,400. Free D/L's, 3.2GB+ adult files, doors, and more. [Exp. #106.]

Success BBS. (408)267-8325. 8-N-1, 1200/2400. S. Bay Entrepreneurs Assoc. BBS. Business opportunities, job shop, buy/sell, ads, personals. Networking for success. Free. [Exp. #106.]

The Support Network BBS. (408)259-0297. 8-N-1, 1200/2400/9600. Community computing for Santa Clara County. Sysop: Frank Arnold. [Exp. #106.]

Sure 2B Famous. (408)866-2659. 8-N-1; 2400. TreNET/VirtualNET, Real Estate photos and listings, professional directory. Sysop: Guy W. Tessum. [Exp. #107.]

The Tech BBS. (408)279-7199. 8-N-1, 5:30 pm-9:30 am, PST. 300-19,200. BBS run by staff and volunteers of The Tech Museum of Innovation. [Exp. #107.]

TeleGraphics. (408)737-8720, 737-1703. DTP, graphic art, multimedia, general interest, Mac based. Free. [Exp. #105.]

Texas Instruments PCs. (408)296-2503. 24 hrs., 2400. Message base, user group info & software for TIPC. Sysop: Mark Cantrell. [Exp. #107.]

Thunder Mountain BBS. (408)266-4553. 8-N-1, 300/1200/2400. Two lines, chat, files for all, email, matchmaker—all free. Sysop: Systlyer. [Exp. #106.]

Tommy's Playhouse BBS. (408)942-9555. 24 hrs., 14,000. Fidonet, Echomail, Adult and teen area. Trade War door, files, utils, GIF, BMP. [Exp. #107.]

The Tower. (408)288-7651. 2400. Files, doors, msgs, 240MB HD, 545 CD. Free. Sysop: Dance Man. [Exp. #105.]

Uncensor BBS. (408)736-6694. 8-N-1, 24 hrs., 1200/2400. Lifestyle bulletin, adult chat, email, library (18 over only). Reg. required. Sysop: Dave. [Exp. #106.]

The Village. (408)229-7060. 2400/9600/16,800. Over 100 online games, 800MB. Full access with first call. Sysop: Michael Wilson. [Exp. #106.]

The Virtual Reality BBS. (408)246-5434. 8-N-1, 1200/2400. Games, files, and Net mail coming soon. Free. Sysop: Jim Busby. [Exp. #107.]

support baud rates over 2400 bps.
If you could correct this mistake, I would appreciate it very much.
Sincerely,
Roy Batchelor (Zardoz)
Burn This Flag BBS
(408)363-9766 (BBS)

Dear Mr. Batchelor:
May I call you Zardoz? Your name is very handsome.
There are a couple of boards still using 1200 baud as their top speed, but since about half (or more) of BBS users are still connecting at 2400 baud, I want to list the speed at which most people will be able to connect without unnecessarily confusing people new to BBSing.

In fact, many boards are using high-speed modems for at least one line and not publishing that number. If a caller can connect at 2400 baud, that's what the review will say. Users with high-speed modems can call and find out if and how the board will accommodate them, but I will point out the existence of high-speed modems on boards that require them as a practical matter (GIF boards, for example).

Thank you for the opportunity to point out that a listing of "2400 baud" does not necessarily mean that the board does not provide for connections at a higher speed.

Thank you for writing. Always nice to hear from one of the NIRVANAnet™ characters.

Suggestions?

I'm always looking for good column ideas and interesting and unusual BBSes to explore, so I'm happy to hear from you! Email me at casey@well.sf.ca.us or address message to Kathleen Creighton on Bay List BBS, (510)339-1045. US mail sent to me in care of MicroTimes takes a while to reach me.

Electronic editions of these columns and other BBS reviews and articles I've written are available about a month after their publication and are downloadable from Bay List BBS, file area 18. Please respect the copyright notice thereon. ■

Copyright © 1993 by Kathleen Creighton. All rights reserved.

Is Your Listing Missing?

Free user group and association listings are limited to the group's name and a ten-word description, including the mailing address and contact phone number. They will be deleted at six-month intervals to ensure timeliness and accuracy of information. Free BBS listings are also limited to the board's name, sysop's name, and a ten-word description including parameters, baud rate, phone number, and registration fee. Because we have an ongoing problem of boards shutting down without telling us, much to the annoyance of would-be callers and the new phone number's owner alike, we will delete these listings after they've run three months.

You can update or renew your listings at any time. If yours is missing, send us a new one! Send your listing information to: US Mail should go to: MicroTimes User Group, 3470 Buskirk Ave., Pleasant Hill, CA 94523. Faxes are welcome at (510)934-2417 or (213)467-5486. Email can be sent to: microx@well.sf.ca.us. Or MCI:MICROTIMES.

Continued

Windows OnLine

FREE PREVIEW!
13 lines, USR-DS
• 8,500 Windows files, 50 new files every day!!
• Publisher of the WinOnLine REVIEW

(510) 736-8343 BBS

THE EXPERTS LOVE US! TOTAL CUSTOMER SATISFACTION

486/33-50 EISA VESA Local Bus Ultimate CAD/CAM

- Intel 80486DX-33 or 80486DX-50 CPU
- 8 Layer USA EISA Motherboard
 - 2 x 32 Bit VESA Local Bus Slots
 - 8 x 32 Bit EISA Expansion Slots
- 256K Cache (Up to 1MB on Board)
- 8MB 60ns RAM (Up to 256MB on Board)
- 200 MB SCSI Hard Drive
- 32 Bit EISA SCSI Hard Drive Controller
- 2 Floppy Disk Drives - 1.2MB & 1.44MB (Teac)
- Viewsonic 7 - 17" Color Monitor (.28dp 1280x1024)
- Northgate Omni101 Keyboard
- Full Tower Chassis w/250 Watt U.L. Power Supply
- I/O: 2S/1P/1G

\$3595/\$3795

Polaris 486-33PV/455PV with Panoramic View

- Intel 80486DX-33 or 80486DX-50 CPU
- Made in USA Motherboard
- 256K Write-Back Cache (20ns)
- 4MB 60ns RAM (9 Chip)
- Artist Graphics Winsprint Panoramic View Graphic Accelerator (1MB VRAM, 32,768 Colors, 2048x768)
- 130 MB Maxtor Hard Drive
- 2 Floppy Disk Drives - 1.2MB & 1.44MB (Teac)
- 14" Non-Interlaced SVGA Monitor (.28dp)
- Maxiswitch or Monterey 101 Key Enhanced Keyboard
- Full Tower Chassis w/250 Watt U.L. Power Supply
- I/O: 2S/1P/G

\$1895/\$2095

Polaris 433VL/455VL VESA Local Bus

- 6 Layer Made in USA Motherboard w/32 Bit VESA Local Bus
- Intel 80486DX-33 or 50 CPU w/ Math Co-Processor
- 256K Cache Standard
- 4MB 60ns RAM (9 Chip)
- 32 Bit VESA Local Bus Graphic Accelerator (Choose from ATI, Diamond or Orchid)
- 130MB Maxtor Hard Drive
- 32 Bit VESA Local Bus Hard Drive Controller
- 2 Floppy Disk Drives - 1.2MB & 1.44MB (Teac)
- 14" Non-Interlaced SVGA Color Monitor (.28DP/1024x768)
- Maxiswitch or Monterey 101 Key Enhanced Keyboard
- Medium Tower Chassis w/ U.L. Approved Power Supply
- I/O: 2S/1P/G

\$1875/\$2075

Polaris 486-33/50 ISA

- 6 Layer Made in USA Motherboard
- Intel 80486DX-33 or 50 CPU w/Math Co-Processor
- 256K Cache Standard
- 4MB 60ns RAM (9 Chip)
- 130MB Maxtor Hard Drive
- 2 Floppy Disk Drives - 1.2MB & 1.44MB (Teac)
- 1MB Trident SVGA Card (1024x768 - 256 Colors)
- 14" Non-Interlaced Color Monitor (.28dp 1024x768)
- Maxiswitch or Monterey 101 Key Enhanced Keyboard
- Medium Tower Chassis w/U.L. Power Supply
- I/O: 2S/1P/G

\$1575/\$1775

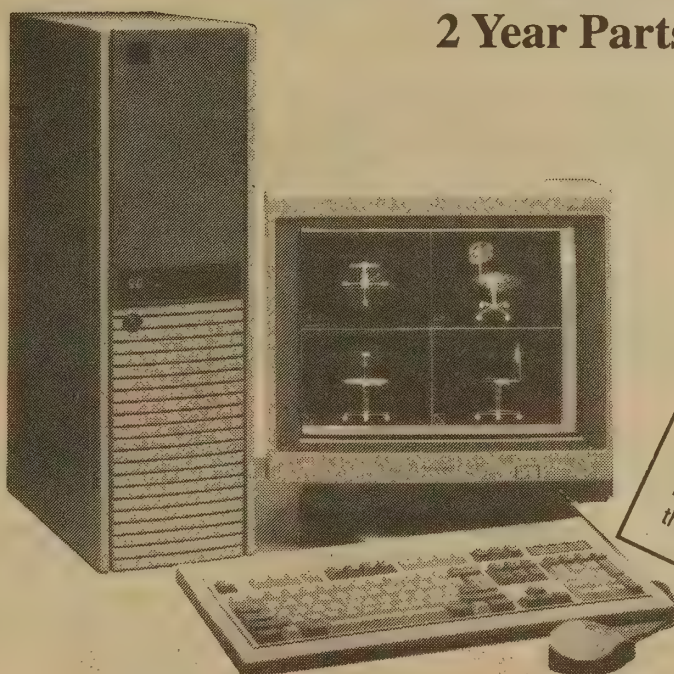
COMPUTER MONTHLY JAN. '93

drive "was so fast that several tests could not be measured." Computer Monthly said "this is a first class product in all respects." You'll say "WOW!" They had more to say, like, "Polaris Microsystems has done an outstanding job... so outstanding, in fact, our benchmarks went through the roof."

"If what you need is the ultimate in speed in your computer, you need to take a look at the Polaris Microsystems line of machines line of machines. As the test below will show, these machines are among the fastest available..."

Computer Currents, Aug. 1992

**5 Year Labor Warranty
2 Year Parts Warranty**



VESA LOCAL BUS EXPERTS
Come see the next generation of VESA Local Bus products demonstrated by experts. We have all the new Local Bus products from ATI, Diamond, Orchid and many other U.S. manufacturers. At Polaris we give you straight answers about the VESA Local Bus standard, and the future of this technology.

The Polaris Quality, Performance, and Service Guarantee

- 5 Year Labor Warranty
- 30 Day Money Back Guarantee
- Top Quality Components with Made in USA Motherboards
- Minimum 72 Hour Burn-In
- Detailed Diagnostic Print-Out

- 2 Years Parts Warranty
- Free Software Installation
- Lifetime Technical Support
- Net Terms Available To Qualified Dealers
- Complete System & Custom Configuration

Hard Drives

Maxtor 7120A IDE	\$249	Fujitsu 512MB SCSI	\$949
Maxtor 7120S SCSI	299	Micropolis 670MB SCSI	1,199
Maxtor 7213A IDE	349	Micropolis 1.2GB SCSI	1,699
Maxtor 7213S SCSI	375	Tape Backups	
Maxtor LXT340A IDE	599	120MB Tape Backup	220
Maxtor LXT340S SCSI	599	250MB Tape Backup	250
Fujitsu 512MB IDE	900		

Complete Upgrade Options Available

Prices subject to change without notice.



Polaris MicroSystems

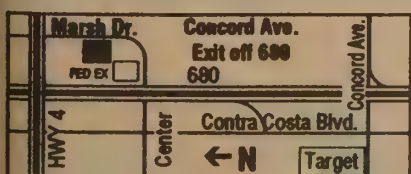
Warehouse Prices Direct to the Public

5702 Marsh Drive, Unit E, Pacheco, Ca 94553 • Hours: M-F 10-6 Sat 10-5

800-775-2601

510-689-2600

Fax: 510-798-0645



HI-TECH USA

Milpitas

Phone: (408) 262-8688

Fax: (408) 262-8772

San Carlos

Phone: (415) 508-8688

Fax: (415) 508-0383



SUPER SALE

486DX2-66/64K EISA.....	\$1,626
486-50/64K EISA.....	\$1,536
486DX2-50/64K EISA.....	\$1,496
486DX-33/64K EISA.....	\$1,386
486DX2-66/64K ISA.....	\$1,496
486DX2-50/64K ISA.....	\$1,366

- Motherboard w/CPU
- 4MB RAM 70NS
- 1.2MB and 1.44MB FDD
- IDE Controller w/2S/1P/1G
- 130MB 16MS Hard Drive
- 101-Key Enhanced Keyboard
- 1024x768 .28DPI 14" Color Mon.
- 512K SVGA Card
- Enhanced Case w/Power Supply

Options

- 256K Cache Add \$40
- Non-Interlaced Monitor Add \$40
- Viewsonic 6E Monitor...Add \$75
- 1MB SVGA Card Add \$20
- 200MB Hard Drive Add \$90
- 340 MB Hard Drive Add \$290

SUPER SALE

486DX-50/64K ISA.....	\$1,406
486-33/64K ISA.....	\$1,106
486SX-33/64K ISA.....	\$1,136
486DX2-66 LOCAL BUS.....	\$1,536
486DX2-50 LOCAL BUS.....	\$1,406
486-33/64K LOCAL BUS.....	\$1,296

- Motherboard with CPU
- 4MB RAM 70NS
- 1.2MB and 1.44MB FDD
- IDE Controller w/2S/1P/1G
- 130MB 16MS Hard Drive
- 101-Key Enhanced Keyboard
- 1024x768 .28DPI 14" Color Mon.
- 512K SVGA Card
- Enhanced Case w/Power Supply

Options

- Non-Interlaced Monitor Add \$40
- 1MB SVGA Card Add \$20
- Local Bus ET4000(1MB) .+ \$100
- Local Bus S3 (1MB)....Add \$150
- 200MB Hard Drive Add \$90
- 340MB Hard Drive Add \$290

SUPER SALE

486SX-25/64K ISA.....	\$996
386-40/64K CACHE.....	\$896
386-33/64K CACHE.....	\$886
386DX-25.....	\$876
386SX-33.....	\$786
386SX-25.....	\$776

- Motherboard w/CPU
- 4MB RAM 70NS (2MB for 386SX)
- 1.2MB and 1.44MB FDD
- IDE Controller w/2S/1P/1G
- 80MB 16MS Hard Drive
- 101-Key Enhanced Keyboard
- 1024x768 .39DPI 14" Color Mon.
- 512K SVGA Card
- Enhanced Case w/Power Supply

Options

- 1MB SVGA Card Add \$20
- .28DPI SVGA Monitor...Add \$40
- Viewsonic 6E Monitor...Add \$115
- 40MB Hard Drive Less \$40
- 130MB Hard Drive Add \$60
- 200 MB Hard Drive Add \$150

NOTEBOOK COMPUTERS

486DX-33/4MB RAM/120MB HD
\$2,486

486SLC-25/2MB RAM/80MB HD
\$1,446

386SX-25/4MB RAM/120MB HD
\$1,296

386SX-25/4MB RAM/80MB HD
\$1,196

386SX-25/2MB RAM/80MB HD
\$1,126

Features

- 1.44MB Floppy Drive
- VGA 640x480 Resolution
- DOS 5.0
- Serial & Parallel Port
- Please Call for Details

TERMS AND CONDITIONS

- One year parts and labor warranty on systems.
- Knowledgeable technical support engineers in service.
- Prices and availability subject to change w/o notice.
- Shipping, insurance and COD charges are extra and non-refundable. Prices reflect cash discounts.
- Return shipping must be insured, prepaid and bearing an RMA# on the shipping label.
- Defective items replaced or repaired at our discretion.
- No responsible for typos.
- All returns subject to 15% restocking fee and cover only Hi-Tech USA brand computers, excludes peripherals and software. No refunds after 30 days.
- Superior reputation for service, quality and value.
- Purchase orders are welcomed and subject to approval.

Why do smart customers keep buying from HI-TECH-USA? Simply because we deliver the best values.

Call and join our smart customer list: ABC, ADAPTEC, ALLIED SIGNAL, AMD, AT&T, CIRRUS LOGIC, DATAQUEST, FLORIDA STATE UNIVERSITY, GENERAL ELECTRIC, IIT, INTEL, LAWRENCE LAB, MAXTOR, NASA, NATIONAL SEMICONDUCTOR, PG&E, QUANTUM CORP, SEAGATE TECHNOLOGY, SIERRA SEMICONDUCTOR, STANFORD UNIVERSITY, SUN MICROSYSTEMS, U.C. BERKELEY, WESTERN DIGITAL, YALE UNIVERSITY, and many, many more.

SYSTEM	MB + CPU	BASIC SYSTEM	BASIC SYS +40MB HDD + 12" MONO & MGP CARD	BASIC SYS + 40MB HDD + VGA CARD & MONITOR	BASIC SYS + 40MB HDD + SVGA CARD & MONITOR	BASIC SYS + 40MB HDD + SVGA CARD & MONITOR	BASIC SYS + 40MB HDD + SVGA CARD & MONITOR	BASIC SYS W/4MB RAM + 130MB HDD + SVGA CARD & MONITOR	BASIC SYS W/4MB RAM + 170MB HDD + SVGA CARD & MONITOR	BASIC SYS W/4MB RAM + 200MB HDD + SVGA CARD & MONITOR
486DX2-66/64C EISA	\$786	\$956	\$1,178	\$1,296	\$1,334	\$1,374	\$1,424	\$1,578	\$1,608	\$1,668
486DX-50/64C EISA	696	866	1,088	1,206	1,244	1,284	1,334	1,488	1,518	1,578
486DX2-50/64C EISA	656	826	1,048	1,166	1,204	1,244	1,294	1,448	1,478	1,538
486DX-33/64C EISA	546	716	938	1,056	1,094	1,134	1,184	1,338	1,368	1,428
486DX2-66C ISA	636	806	1,028	1,146	1,184	1,224	1,274	1,428	1,458	1,518
486DX-50C ISA	546	716	938	1,056	1,094	1,134	1,184	1,338	1,368	1,428
486DX2-50C ISA	506	676	898	1,016	1,054	1,094	1,144	1,298	1,328	1,388
486-33/64C ISA	274	442	664	782	820	860	910	1,064	1,094	1,154
486SX-25C ISA	204	364	586	704	742	782	832	986	1,016	1,076
386DX-40/64C	152	312	534	652	690	730	780	934	964	1,024
386DX-33/64C	148	308	530	648	686	726	776	930	960	1,020
386DX-25	134	294	516	634	672	712	762	916	946	1,006
386SX-33	92	256	478	596	634	674	724	878	908	968
386SX-25	84	244	466	584	622	662	712	866	896	956
386SX-16	72	240	462	580	618	658	708	862	892	952
286-20	64	230	452	570	608	648	698	852	882	942

BASIC SYSTEM CONFIGURATION:

Motherboard & CPU, 1MB (512KB for 286 systems) memory installed, 1:1 2HD/2FD controller, 1.2MB or 1.44MB Floppy Drive, Internal Clock/Calendar, Enhance Case with Power Supply, and 101-Key Enhanced Keyboard.

** Please call for 286-16 and 286-12 prices.

VIDEO OPTIONS

12" Mono monitor w/MGP card.....	\$88
14" Mono monitor w/MGP card.....	98
14" VGA Mono Monitor.....	106
14" VGA monitor w/16-bit VGA card.....	204
14" SVGA monitor with 512k card.....	244
VGA-256K (800*600, 16-Bit).....	26
VGA-512K (1024*768, 16-Bit).....	36
1M SVGA card (1024*768*256).....	54
Diamond Speed Star 24X w/ Hi-Color.....	148
Diamond Stealth 24 w/1MB.....	158
Orchid IIs w/ 1MB (w/SYS).....	112
Orchid IIs/Hi-Color (w/SYS).....	118
Orchid Fahrenheit 24-Bit (w/SYS).....	148
ATI Graphic Ultra w/ Mouse.....	248
ATI Graphic Ultra Plus w/2MB.....	298
ATI Graphic Ultra Pro w/2MB.....	398
Nanao 9080i (16", 1280*1024, 0.28).....	890
Nanao F550i (17", 1280*1024, 0.28).....	1,018
Nanao F560i (17", 1280*1024, 0.26).....	1,756
NEC 3FGX (15", 1024*768, 0.28).....	618
NEC 4FG (15", 1024*768, 0.28).....	726
MAG 15F (15", 1280*1024, 0.28).....	564
MAG 17F (17", 1280*1024, 0.26).....	1,048
Sony CPD 1304S / 1430.....	536 / 598
Sony CPD 1604S.....	946

HITACHI CM-2085M+ (20").....	1,294
HITACHI CM-2187M (21").....	2,188
Standard VGA (640*480) Monitor 0.51.....	178
Super VGA (1024*768) Monitor 0.39.....	208
Super VGA (1024*768) Monitor 0.28.....	248
Super VGA Non-Interlaced Monitor 0.28.....	278
Viewsoic 4 E.....	280
Viewsoic 5 E.....	380
Viewsoic 5+.....	480
Viewsonic 6 E.....	320
Viewsonic 6 FS.....	538
Viewsonic 7.....	962
Viewsonic 8.....	1,512

HARD / FLOPPY DRIVE ADAPTERS

IDE 2FD/2HD Cache Controller.....	\$118
IDE 2FD/2HD with 2S/1P/1G.....	14
MFM 2FD/2HD.....	36
Ultrastor ESDI w/32K Cache (ISA).....	150
Adaptec SCSI 1542KB w/Kit (ISA).....	236
Bustek SCSI (EISA).....	280
Ultrastor SCSI 24F (EISA).....	420
Ultrastor ESDI 22F (EISA).....	420

NEW HARD DRIVES

40mb/28ms or 52mb/19ms (IDE).....	\$134 / 150
80mb/18ms or 100mb/18ms (IDE).....	178 / 208
120mb/16ms (IDE).....	228
130mb/16ms (IDE).....	234
170mb/16ms (IDE).....	258
200mb/16ms or 240mb/15ms (IDE) 318 / 400	
200mb/16ms (SCSI).....	400
340mb/15ms or 540mb/13ms (IDE).....	510 / 818
676mb/16ms (SCSI).....	1,048

PRINTERS

Citizen 200GX (9-Pin).....	\$158
Citizen GSX-230 (24-Pin) Quiet.....	248
Citizen GSX-240 (24-Pin) Quiet.....	318
Citizen GSX-145 (24-Pin).....	388
Color Option for Citizen Printer.....	48 / 68
Panasonic KX-P1180 / 1123.....	158 / 208
Panasonic KX-P1124i / 1624.....	288 / 364

MATH COPROCESSORS

Intel 80287-10.....	\$44
Intel 387SX-25 / 20 / 16.....	82
Intel 387DX-33 / 25 / 20 / 16.....	86
CYRIX 387DX-40 / 33.....	90 / 68
CYRIX 387SX-25 / 16.....	68 / 68

KEYBOARDS

101 Enhanced Keyboard.....	\$20
Maxiswitch / Keytronics.....	30 / 33
Focus 2001 / 9000.....	38 / 78
Omnkey 101 / 102 / Ultra.....	64 / 64 / 86

MISCELLANEOUS

Windows 3.1 with Mouse (with system).....	\$48
2400 Modem (w/9600 Send Fax).....	31
Fax Modem (9600 Fax, 2400 Modem).....	51
Fax Modem (14,400 Fax, 14,400 Modem).....	194
3-button Mouse.....	12
Mini Tower Case w/200W PS.....	54
Desktop AT Case w/200W PS.....	58
Medium Tower Case w/230W PS.....	86
Full Tower Case w/250W PS.....	116
Logitech Mouseman Serial/Bus.....	59 / 59
Logitech Trackman.....	74
Colorado Tape Backup 120mb.....	175
Colorado Tape Backup 250mb.....	226
ATI Sound Card Pro.....	108
Creative Labs Sound Blaster.....	84
Sound Blaster Pro w/MIDI Kit.....	178
Creative Labs CD-ROM Upgrade Kit.....	448
SONY CD-ROM CDU031 / 541.....	298 / 410
16-Bit Ethernet Card COAX/10Base-T.....	71

HOURS: Monday - Friday: 8am to 6pm
Saturday: 10am to 4pm

SOUTH BAY

Phone (408) 262-8688
1558 & 1562 Centre Pointe Drive
Milpitas, CA 95035 Fax (408) 262-8772

**HI-TECH
USA**

PENINSULA

Phone (415) 508-8688
981B Industrial Road
San Carlos, CA 94070 Fax (415) 508-0383

415

1st Pacific Computer & Software Exchange. (415)759-6341. 24 hrs., Buy, sell, trade, new, used. Quick D/L of all info & list. Free. Voice: (415)759-6070, 2-6 pm. [Exp. #106.]

4 Corners BBS. (415)989-7957. 24 hrs., 300/1200/2400/9600/14,400. Online games, 5000+ files, msgs, doors. Free access, low rates. Sysop: Stephen Kurtz. [Exp. #105.]

5 Star BBS. (415)681-1172. 8-N-1, 24 hrs., 1200/2400/9600. Music, GIFs, games, adult, animation, shareware files. Sysop: Peter Lau. [Exp. #106.]

38 North/122 West. (415)343-7517. 24 hrs., 14,400. Sailing, interracial couples, doors, boat for sale ads. Sysop: Martin Schaff. [Exp. #105.]

ABACUS (Atari Bay Area Users Society). (415)587-8062. 300/1200/2400. For 8-bit and ST/TT users. [Exp. #106.]

AHA Hydrogen BBS. (415)494-3316. 8-N-1, 1200/2400/9600/14,400. Alt. energy info—prosperity without pollution. [Exp. #107.]

AIDS Info BBS. (415)626-1246. 8-N-1, 24 hrs., 1200/2400. 32MB dBASE with index, The-saurus keyword search, online help instructions (no chat). Topics on AIDS including read/write discussions, periodicals, news articles, resource contacts, private email between users. Sysop: Ben Gardiner. [Exp. #106.]

ALIEN BBS. (415)359-8774. 8-N-1, 24 hrs., 1200-14,400. Amiga/IBM/Mac info. Adult boards w/registration. Free. Sysop: Ed Vandehey. [Exp. #107.]

Anatomically Correct BBS. (415)856-8425. 24 hrs., 2400. Free, adults only, unique "chat," dozens of articles & message base. Sysop: Howieid. [Exp. #105.]

Attitude Online. (415)712-0501. 8-N-1, 1200/2400. Email, technical software/hardware gurus, files. No fees. Sysop: Ray Taft. [Exp. #105.]

Back Door For Bi/Straight Men & Women. (415)756-8452. 8-N-1, 24 hrs. 10 lines, 18 and over only. [Exp. #107.]

Back Door For Gay/Bi Men. (415)756-6238. 8-N-1, 24 hrs. 33 lines, alt lifestyles, 18 and over only. [Exp. #107.]

Back Door For Lesbian/Bi Women. (415)756-8426. 8-N-1, 24 hrs. 10 lines, alt lifestyles, 18 and over only. [Exp. #107.]

BAHUG BBS. (415)326-4486. 8-N-1, 24 hrs., 300/1200/2400. DTP info and help for Heath/Zenith machines. Free. Co-Sysops: Freeman Bradford and Ed Hayes. [Exp. #107.]

Bay Area Luv Connection. (415)822-7220. 24 hrs. Adult

board, 16 lines. Fee. Voice: (415)239-1028. [Exp. #105.]

Bay City Reader Online. (415)552-3961. 2400. SF's online magazine—politics, literature, plays, short stories. \$25 subscription. [Exp. #107.]

Bay Windows BBS. (415)755-2939. 10-11 pm, 2400. DOS, utils, email. No reg fee, no ratios. Sysop: Judy. [Exp. #107.]

BBS Of San Francisco Apple Core. (415)563-8652. 24 hrs., 2400. Lots of fun, supports Apple II and GS computers. [Exp. #106.]

The Board With No Name North. (415)558-8866. 8-N-1, 24 hrs., 300/1200/2400. Gay & Lesbian community, chat, ONMICHat, email, library w/ GIF's & Fantasy text. [Exp. #107.]

California ConneXion Partyline. (415)927-2739. 8-N-1, 23.5 hrs., 300/1200/2400/9600/14,400. Nine lines, 400MB, group chat, worldwide network, 40+ pubs, matchmaking, adults only. Reg required. [Exp. #106.]

California Online! (415)331-4081. 14,400. We've moved! Wide local calling area. Huge file database, chat, multiple international nets. Free & reg access. Sysop: Jim Thomson. [Exp. #107.]

Campool BBS. (415)948-8928. 9600. IBM/MS-DOS file exchange, three lines w/2,800 files. Los Altos. Sysop: Andy Bajka. [Exp. #106.]

The Classifieds BBS. (415)665-7918, 665-2475. 8-N-1, 24 hrs., 1200/2400/9600/14,400. For sale, echomail, files, and more. [Exp. #107.]

Clipboard. (415)239-0454. 8-N-1, 3pm-11pm. For Clipper and xBASE programmers and developers. 100MB+ files. [Exp. #106.]

CompUCall. (415)703-1297. 7-E-1, 1200/2400. California's Public Utilities Commission's calendars, decisions, releases. [Exp. #107.]

Computer Show Hotline. (415)340-9370. 8-N-1, 1200/2400. Latest Computer Show info. Complete list of dates, times, locations, and directions. [Exp. #105.]

Covert Operations. (415)897-1880. 24 hrs., 1200/2400/9600. Wildcat 3.55, growing Marin BBS, WildNet, adult GIFs. Free. [Exp. #106.]

DataFax BBS. (415)390-9577. 8-N-1, 24 hrs., 1200/2400/9600. Tech support for Calculus EZ-Tax and Sizcomp modems. Free access. Sysop: Tod Wooton. [Exp. #107.]

DPNet BBS. (415)788-8663. 8-N-1, 24 hrs., 300/1200/2400/9600. Free consultant job listings, Fidonet conferences, professional computing organizations, and technical SIGs. All

welcome. [Exp. #107.]

Dragon's Curse BBS. (415)383-9487. Sundays, noon-2 pm. 300/1200/2400. Games, doors, adult files, free. [Exp. #107.]

The Eagle's Nest. (415)892-7175. 8-N-1, 300/1200/2400/9600/14,400. Lrg file area on CD-ROM w/no ratio, many online doors. No fee. Sysop: Raymond Reding. [Exp. #107.]

The Elfspire Tome BBS. (415)595-2387. 1200/2400/9600. A fantasy role-playing G.M. resource bulletin board featuring role-playing, games, fantasy clipart, and more. [Exp. #107.]

Fog City. (415)863-9697. 8-N-1. Gay & Lesbian community, chat, matchmaking, CD-ROMs, games, 2.4GB. Since 1986. [Exp. #107.]

Golden Gate Computer Society BBS. (415)927-1216. 24 hrs., 2400-14,400. 4 lines, toll free for SF, East Bay. Member of ILink & Baylink message networks. [Exp. #107.]

Graveyard Shift BBS. (415)923-9060. 14,400 Adult-oriented theme, GIFs, animation's, msg., texts. [Exp. #106.]

Griffin DataFast. (415)327-5156. 8-N-1, 24 hrs., 1200/2400/9600/14,400. OS/2, DOS & Windows files, messages. OS/2 FAQ Hardware at wholesale. Sysop: Scott Williams. [Exp. #107.]

Guideboard. (415)864-3858. 24 hrs., 300/1200/2400. Multiline, Cabbie's Guide to SF restaurants, doctors, auto repair, etc. Sysop: Dick Schwartz. [Exp. #107.]

Hispanic On-Line Access—HOLA. (415)252-0285. 8-N-1, 8:00 am-9:00 pm, 300/1200/2400. Hispanic issues, software, business, Latin America news. Free. [Exp. #105.]

IBBS West. (415)564-9998. 8-N-1, 24 hrs., 300/1200/2400/9600/14,400. PC and compatibles, utils., adult GIFs, CD-ROM w/10,000 files, free trial. [Exp. #106.]

Incipits Remote BBS. (415)324-2601. 1200-38,400. Tons of shareware for DOS, OS/2, and UNIX. Distribution point for 386BSD PD UNIX OS. Specializing in network, programming, and multi-OS shareware. [Exp. #106.]

InfoDude Communications. (415)855-9500. 24 hrs., 14,400. Teleconferencing, Forums. IBM, Windows, Mac, and Amiga files. Lrg adult area. Section for women only. Sysop: Joseph A. Jenkins. [Exp. #107.]

The Informer BBS. (415)468-6713, 468-9913. 24 hrs., 2400-14,400. CalNet, Intelic, FamNet, WindNet, Newlife Operating Systems, Tech Specs, conferences. Subscription/free. Sysop: John Custer. [Exp.

#107.]

KALW—FM BBS. (415)641-4373. Political discussions, Human Rights Reports, and listener feedback. [Exp. #106.]

Legal Information Systems. (415)331-7220. 8-N-1, 2400. Text of recent CA and CA App cases. Reg Req. [Exp. #105.]

Lies Unlimited. (415)583-4102. 2400. Politics and polemics. NIRVANAnet. Instant access, no fee. [Exp. #107.]

MacDungeon BBS. (415)584-0216. 300/1200/2400. Mac, IBM files, XXXGIFs, anarchy. Free. Sysop: PumpkinHead. [Exp. #106.]

Marin County Net. (415)331-6241. 24 hrs., 2400-16,800. Aviation, sailing, weather, Fidonet conferences. Free. [Exp. #106.]

Media Literacy BBS. (415)621-5156. 8-N-1, 24 hrs., 300/1200/2400. Online resources for educators and others interested in media education. Sysop: Kathleen Tyner. [Exp. #106.]

The MIDI & Multimedia Exchange BBS. (415)771-1788. 8-N-1. .MID/.MOD, .AVI, .FLI Libraries. Free access. [Exp. #107.]

The New Dork Sublime BBS. (415)864-DORK. Subliminal news for new dorks everywhere. NIRVANAnet node 9:00/10. Sysop: Demented Pimiento. [Exp. #107.]

Pacific Vision BBS. (415)324-3780. 8-N-1, 300/1200/2400. Jobs and business online, community events, discussion lounge, rent a board. [Exp. #105.]

The Pink Triangle. (415)921-7609. 8-N-1, 24 hrs., 2400. New Gay Men's BBS: issues, dating. [Exp. #106.]

The Play-Pen BBS. (415)897-3073. 8-N-1, 24 hrs., 1200-19,200. BBS-Chess, MarkMail. Free. Sysop: Paul Ward. [Exp. #107.]

Recovery BBS. (415)255-2188. 8-N-1, 300/1200/2400. AA, NA, AI-Anon/ACA, SLAA. Recovery and 12 Step Echos. Fido 125/9. Sysop: Rich Gorlin. [Exp. #107.]

Robotics Society Of America BBS. (415)648-6427. 24 hrs., 1200. Sysop: Rob Stevens. [Exp. #105.]

The Rolling Thunder BBS. (415)593-9790. 8-N-1, 24 hrs., 300/1200/2400/9600/14,400. IBM, GIF, and sound files. Lots of Doors, Star Trek and BSA conferences. Sysop: Kevin and Scott. [Exp. #106.]

Salt And Light. (415)368-0790. 8-N-1, 1200/2400. IBM, Biblical understanding—files and question area. Sysop: Peninsula Christian Center. [Exp. #107.]

The Sanctum. (415)753-6861, 731-9859. Food for thought—

discussion and debate. No reg. fee, voice validation req. [Exp. #105.]

San Francisco PC Users Group BBS. (415)621-2609. 8-N-1, 24 hrs., 1200/2400/9600/14,400. Sysop: Richard Couture. [Exp. #107.]

SearchNet International BBS. (415)873-5336. Gov't files, FCC watchdog, free speech, politics, nonprofit group material accepted. Voice: (408)236-3706. Sysop: James P. Leonard. [Exp. #107.]

SF Cacophony Society. (415)776-5513. 8-N-1, 19:00-07:00, 2400. Adventures beyond the pale of mainstream society. Free. [Exp. #106.]

SF Net. (415)824-8747, 589-2194, 332-3923, (510)450-0155, 638-8644. Coffee House/Cafe Connection, 30 lines, chat, matchmaker, msg areas, Fido 1:125/824, UUCP Connection. [Exp. #106.]

Skeptic's Board. (415)572-0359. Science and fringe science. Internet/Usenet access. San Mateo. Sysop: Rick Moen. [Exp. #107.]

The Skull. (415)637-9077, 692-7721. 2400-16,800. Palo Alto/SF, multiline, GIFs, games. Since 1985. [Exp. #105.]

SMUG (Stanford-Palo Alto Mac User Group) BBS. (415)856-0210. BBS on Threshold 2000, uses Telefinder GUI. [Exp. #105.]

SpaceBBS. (415)323-4193. 10 lines, Boardwatch Top 10 BBS, 50,000 files, UPI News, etc. ASP. Hub BBS site. Sysop: Owen Hawkins. [Exp. #107.]

Starnet Connections. (415)949-3133. 8-N-1, 24 hrs., 300/1200/2400/9600. Los Altos. Email, USENET, UNIX, and more. Sysop: Richard Mahn. [Exp. #106.]

The StrongHold BBS. (415)992-2860. 24 hrs., 1200/2400/9600/14,400. Files, messages, games. Calnet/Hogenet. Sysop: Chris Jong. [Exp. #106.]

Swizzle Stick—Macintosh. (415)589-4404. 1200/2400/9600/14,400. Two lines, Kate Bush & foreign travel, 100 msg areas 600MB Mac files. Fidonet 1:125/110. [Exp. #107.]

The System. (415)369-5144. 8-N-1, 24 hrs., 300/1200/2400/9600. Accounting, AccPac, BPI, Simply, Telemagic, Novell networks, email. [Exp. #107.]

TECNET. (415)390-9279. 8-N-1, 24 hrs., 1200/2400/9600/14,400. Two lines, technical help w/testing equipment, classified ads, graphical, new board. Extra for subscribers. Sysop: John E. Fisher II. [Exp. #106.]

TimeStream Historical/Gamers BBS. (415)666-0471. 300-19,200. For RPGamers, GMs, Cacophony, SCA, and FaireFolk. Fidonet, Shadownet,

email. Historical interest group areas. Sysop: William Watters. [Exp. #106.]

Toad Hall BBS. (415)595-2427. Intelac, Smartnet, Rime & Calnet networks. [Exp. #105.]

Tomorrow's Order Of Magnitude. (415)961-9315. 2400. Serving inmates, patients, and reg'd voters in the South Bay. Sysop: finger-man. [Exp. #107.]

The Trade Center BBS. (415)340-7261. 24 hrs., 14,400. Games, utils., 600MB of GIFs, adult and general areas, conferences, and more. Sysop: Gabriel Turk. [Exp. #106.]

Uncle D's Directory. (415)364-3001. 8-N-1, 24 hrs., 1200/2400/9600. Software for deaf & education, msgs, file search, classified ads, doorways. No fees. [Exp. #106.]

VA Listings. (415)744-7793. 24 hrs., 300/1200/2400. VA-owned homes for sale. Multiline. Sysop: David Piersall. [Exp. #107.]

VidGame BBS. (415)742-6441. 2400-14,400. 3900 GIFs, music files, doors, 290+ conferences, utilities. Over 2.3GB. Sysop: George Hassmer. [Exp. #105.]

Virtual Reality BBS. (415)661-7783. 8-N-1, 2400. Schedule of user group meetings; VR software; networking; all free. [Exp. #107.]

Wetware Diversions Public UNIX. (415)826-0397. 8-N-1, 24 hrs., 1200/2400. Full Usenet news, eight lines. Sysop: Eric Swason (editor@wet.UUCP). [Exp. #107.]

Windows NT Online Support. (415)572-9661. 300/1200/2400/9600/14,400. MS Windows NT support, messages, files, WINNTNET. Sysop: Bruce Chester. [Exp. #106.]

Window World BBS. (415)931-0649. 24 hrs. For people who use Windows-type software. Info., shareware, chat. Sysop: Bob Cram. [Exp. #107.]

Zen Connection. (415)389-9245. 1200/2400/9600/14,400. Open to all Spiritual seekers. Meditation topics, living Masters, and events. Sysop: Premananda. [Exp. #106.]

510

& The Temple Of The Screaming Electron. (510)935-5845. 38,400. A safe haven for visionaries and paranoids, 100MB, NIRVANAnet. No fee. Sysop: Jeff Hunter. [Exp. #107.]

8-Bit Apple User Group BBS. (510)294-8052. 24 hrs., 300/1200/2400. Apple II ProDOS, DOS 3.3, UL/DL, email. No fees. Sysop: Noel Anklam. [Exp. #107.]

Abyss Multiline Systems. Continued

SCIENTECH SILVER SERIES!

5 YEAR LABOR WARRANTY
What an Incredible Deal!

SILVER SERIES SYSTEMS

LOCAL BUS Systems

486DX2-66 MHz 64K	..\$1264
486DX-50 MHz 64K	..\$1195
486DX2-50 MHz 64K	..\$1138
486DX-33 MHz	
64K	\$1019

EISA Systems

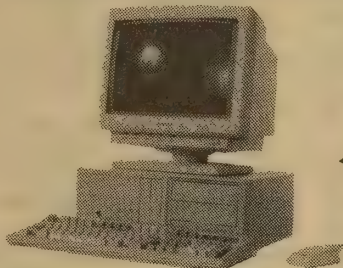
486DX2-66 MHz 64K	..\$1459
486DX-50 MHz 64K	..\$1449
486DX2-50 MHz 64K	..\$1332
486DX-33 MHz 64K	..\$1214

ISA Systems

486DX2-66 MHz 64K	..\$1239
486DX-50 MHz 64K	..\$1186
486DX2-50 MHz 64K	..\$1112
486DX-33 MHz 64K	\$993
486SX-25 MHz	\$810
386DX-40 MHz 64K	\$737
386DX-33 MHz 64K	\$729
386SX-25 MHz	\$673

SILVER SERIES INCLUDES:

- Intel Microprocessor
- Math-coprocessor socket
- AMI BIOS with Setup Utilities
- Mini-Tower case
- w/250W power supply,
- 1MB 70ns RAM (Hi Speed)
- Teac 1.2MB or 1.44MB Floppy Drives
- 40MB IDE Hard Disk
- 2H/2F IDE Controller
- 2 Serial/1 Parallel/1 Game Ports
- Super VGA (1024x768, .28dp)
- Super VGA Card w/1MB
- Enhanced 101-key keyboard



ADD \$70
FOR
NATIONWIDE
ON-SITE
SERVICE

SILVER SERIES UPGRADES

CACHE UPGRADES

From 64K to 128K	\$15
From 64K to 256K	40

MEMORY UPGRADES

1MB x 9, 70ns	\$31 ⁵⁰
4MB x 9, 70ns	118 ⁵⁰

CASE UPGRADES

Baby At Desktop w/200W ps	\$9
Medium Tower w/250W ps	21
Full Tower w/250W ps	38

HARD DISK UPGRADES

80MB, 15ms	\$57
120MB, 15ms	107
170MB, 15ms	124
200MB, 15ms	196
340MB, 15ms	386

VIDEO DISPLAY UPGRADES

Tseng Labs ET4000	\$15 ⁵⁰
Tseng ET 4000, VESA Local Bus w/1MB (DRAM)	64

ATI Ultra Pro w/2MB (VRAM)

1280 x1024, 33MHz Only	353
------------------------	----------

ATI Ultra Pro w/2MB w/Mouse

1280x1024, Windows Accel	245
--------------------------	----------

ATI Ultra w/1MB (VRAM) w/Mouse 1280x1024,

Windows Accel	198
---------------	----------

Diamond Stealth w/1MB (VRAM)

1280x1024 Windows Accel	147
-------------------------	----------

Diamond Speedstar 24X w/1MB (VRAM)

1280x1024	99
-----------	---------

Diamond Speedstar 24 w/1MB

(DRAM) 1280x1024	79
------------------	---------

Orchid 805 VESA Local w/1MB 1024x768

	89
--	---------

Orchid Pro IIs w/1MB 1024x768

	89
--	---------

Orchid Fahrenheit 1280 w/1MB Win Acc

	79
--	---------

Orchid Prodesigner IIs w/1MB Hi-Color

	75
--	---------

Orchid Prodesigner II w/1MB 1024x768

	64
--	---------

SOCOS

1402 14" 1024x768 SVGA,	
-------------------------	--

Interface, .28dp	\$16
------------------	-----------

1448 14" 1024x768

Non-Interface, .28dp	52
----------------------	---------

1548 15" 1280x1024 Interlace, .28 dp

	170
--	----------

VIEWSONIC

4E 14" 1024x768, .28dp	\$52
------------------------	-----------

6E 14" 1024x768 Non-Int. .28dp	93
--------------------------------	---------

5E 14" 1024x768 Ultra Non-Int. .28dp	155
--------------------------------------	----------

5+ 14" 1024x768 Ultra Non-Int. .28dp	258
--------------------------------------	----------

6FS 15" 1024x768 Ultra Non-Int. .28dp, Flat	330
---	----------

7 17" 1280x1024 Ultra Non-Int. .31dp, Flat	732
--	----------

8 20" 1280x1024	
-----------------	--

Ultra Non-Int. .31dp, Flat	1288
----------------------------	-----------

SONY

1304S 14" 1024x768 .25dp	
--------------------------	--

Trinitron Tube	325
----------------	----------

1604 16" 1024x768 .25dp	
-------------------------	--

Trinitron Tube	737
----------------	----------

CPU & MEMORY

CPU's

486-66DX2	\$547
-----------	------------

486-50DX	480
----------	----------

486-50DX2	424
-----------	----------

486-33DX	309
----------	----------

386-40	73
--------	---------

386-33	68
--------	---------

MEMORY MODULE

1x9-70ns	\$31 ⁵⁰
----------	-------------------------

256x9-70ns	8 ⁵⁰
------------	----------------------

4x9-70ns	119
----------	----------

Corporate, Government,
and University PO's accepted.
All specifications & prices are subject to change
W/O notice. Not responsible for typographical errors.

NOTEBOOKS

CHAPLET NOTEBOOKS

486SLC-25MHz Notebook	
•w/HD (see below) • 1.44 Floppy Drive •2MB	
80MB Model	\$1365
120MB Model	1489
200MB Model	1715
RAM Upgrade to 4MB	\$52

386SL-25MHz Notebook

•w/HD (see below) • 1.44 Floppy Drive •2MB	
60MB Model	\$1314
80MB Model	1365
120MB Model	1489
Upgrades	
2MB Memory Card	\$108
4MB Memory Card	211
9600/4800/2400 Sed/Recv/Fax Modem	88
Extra Battery	49
Battery Charger, also for add-on battery	88
Leather Carrying Bag	50

386SX-25MHz Notebook

•1.44MB Floppy Drive •2MB	\$915
---------------------------	------------

386SX-25MHz Notebook

•1.44MB Floppy Drive •4MB	\$975
Upgrades	
60MB Conner HD	\$225
80MB Conner HD	285
120MB Toshiba HD	430
2MB Memory Card	115
4MB Memory Card	220
9600/4800/2400 Sed/Recv/Fax Modem	85
Battery Charger	88
ALL Notebooks come with vinyl carrying case, AC adaptor, and DOS 5.0	

BONDWELL NOTEBOOKS

486SLC-25MHz 80MB	\$1418
486SLC-25MHz	
w/Removable Cartridge 2X42M HDD	1702
386SL-33MHz 80MB	1324
386SL-33MHz w/Removable Cartridge	
2X42M HDD	1607
386SL-25MHz 60MB	1020

NETWORKING PRODUCTS

ETHERNET NIC

ETHER-8+ 8-bit Coax	
Ethernet Card (NE-1000 compatible)	\$61
ETHER-16+ 16-bit Coax	
Ethernet Card (NE-2000 compatible)	72
ETHER-8TP+ 8-bit 10BASE-T	
Ethernet Card (NE-1000 compatible)	61
ETHER-16TP+ 16-bit 10BASE-T	
Ethernet Card (NE-2000 compatible)	72

TOKEN-RING NIC

TOKEN-8 8-bit Token Ring	
16/4mbps Card (100% IBM compatible)	\$425
TOKEN-MC Micro-channel	
Token Ring Card for IBM PS/2	425

POCKET LAN ADAPTER

PE-1200 Pocket Ethernet	
Adapter for Laptop (Coax)	\$171
PE-1200TP Pocket Ethernet	
for Laptop (Twisted Pair)	171
PA-1200 Pocket ARCNET	
Adapter for Laptop (Coax/Star)	152
PA-1200TP Pocket ARCNET	
Adapter for Laptop (Twisted Pair)	152

HUB

ETHER-H9 9-port 10BASE-T Ethernet Hub	\$237
ETHER-H12 12-port 10BASE-T	
Ethernet Hub	479

COMPONENTS

GRAPHIC CARDS

Trident 8900 w/1MB	
(1024x768 256 Colors)	\$55
Tseng Labs ET4000 w/1MB	
(1024x768 256 Colors)	70
Tseng ET 4000, VESA Local Bus	
w/1MB (DRAM) 1280x1024	118
ATI Ultra Pro VESA Local Bus w/2MB	
(VRAM) 1280 x1024, 33MHz Only	406
ATI Ultra Pro w/2MB (VRAM)	
1280x1024, Windows Accel	401
ATI Ultra Plus w/2MB (DRAM)	
w/Mouse 1280x1024, Windows Accel	299
ATI Ultra w/1MB (VRAM)	
w/Mouse 1280x1024, Windows Accel	253
Diamond Stealth w/1MB	
(VRAM) 1280x1024 Windows Accel	200
Diamond Speedstar 24X w/	
1MB (VRAM) 1280x1024	134
Diamond Speedstar 24	
w/1MB (DRAM) 1280x1024	155
Orchid 805 VESA Local	
w/1MB (DRAM) 1024x768	144
Orchid Prodesigner II w/1MB 1024x768	118
Orchid Prodesigner IIs w/1MB	
(DRAM) 1024x768, Hi-Color	128
Orchid Fahrenheit 1280 w/1MB	
(VRAM) 1280x1024 Windows Accel	134

MONITORS

AVGA Monitor 1024x768 .28dp	\$236
SOCOS	
1402 14" 1024x768	
SVGA, Interlace, .28dp	253
1448 14" 1024x768 Non-Interlace, .28dp	288
1548 15" 1280x1024 Interlace, .28 dp	406

VIEWSONIC

1 14" 640x480 VGA .28dp	226
4E 14" 1024x768, .28dp	284
5E 14" 1024x768 Ultra Non-Int. .28dp	391
5+ 14" 1024x768 Ultra Non-Int. .28dp	494
6E 14" 1024x768 Non-Int. .28dp	324
6FS 15" 1024x768	
Ultra Non-Int. .28dp, Flat	566
7 17" 1280x1024 Ultra Non-Int. .31dp, Flat	968

8 20" 1280x1024	
Ultra Non-Int. .31dp, Flat	1510

SONY

1304S 14" 1024x768 .25dp Trinitron Tube	\$561
1604 16" 1024x768 .25dp Trinitron Tube	973

HARD DISK

105MB TEAC IDE	\$206
210MB TEAC IDE	324
42MB CONNER IDE	134
60MB CONNER IDE	180
120MB CONNER IDE	234
212MB CONNER IDE	325
80MB WESTERN DIGITAL IDE	185
213MB MAXTOR IDE	325
158MB MAXTOR ESDI	385
338MB MAXTOR ESDI	595
677MB MAXTOR ESDI	995
120MB QUANTUM IDE	235
240MB QUANTUM IDE	453
340MB IDE	513

CD-ROM

SONY 535.0 SONY AT Bus	
CD-ROM w/Interface Kit	\$285
SONY 535-CD SONY AT BUS	
CD-ROM w/Software & CD	395

TAPE BACK-UPS

COLORADO 120MB	\$179
COLORADO 250MB	249

SCANNERS

HP ScanJet IIP w/1F	\$850
HP ScanJet IIC w/1F	\$10W

MISCELLANEOUS

9600 Baud Fax Modem	\$55
2400 Baud Modem	35
Panasonic KP-P1180 w/Cable	158
Panasonic KP-P1123 w/Cable	198
Panasonic KP-P1624 w/Cable	338
Panasonic KP-P1124 w/Cable	278
UPS (Uninterrupted Power Supply)	\$10W
ALL Kinds Mainboards	\$10W
Big Tower Case w/230W ps	86
Mini-tower case w/200W ps	50
Desktop Case w/200W ps	56

ScienTech R & D Inc.

"A Quality Computer Store"

2845 Whipple Road
Union City, CA 94587

(510) 429-8690

Fax: (510) 429-8693

Hours M-F 9-6

SAT 10-4



Leasing Available

SJ	
	Whipple
888	X
	SF

(510)482-2992, 357-1974. World echos & Net mail, group & private chat, matchmaker. [Exp. #106.]

Activist. (510)532-6248. 1200/2400/9600/14,400. Text/talk on politics, tech, consp, priv, hist, cryptog, phil, ethics, arts/NorCalNet. Sysop: Walter Alter. [Exp. #107.]

Amador Valley High School BBS. (510)484-3005. 8-N-1, 24 hrs., 1200/2400. Free. [Exp. #107.]

Bay Area OS/2 BBS. (510)657-7948. 8-N-1, 2400/9600. OS/2 files and conferences. Free. Sysop: Greg Altman. [Exp. #106.]

BayView Graphics BBS. (510)223-3763. 300-38,400. Graphics & telecommunications files. BRRANet echo conferences. Sysop: Bob Rider. [Exp. #107.]

Berkeley WWIV Chess BBS. (510)486-0795. 8-N-1, 2400. Chessmaster's corner, Fido International Chess Echo, USENET rec. games, chess. Sysop: Walter Wood. [Exp. #106.]

The Big Board. (510)582-9364. 8-N-1, 24 hrs., 300/1200/2400. An alternative way for chubbies to meet chasers. For those without a computer, send a short message to the Sysop, who will put it on the board. Voice: (415)824-8254. Free. Sysop: Cliff Wilson. [Exp. #105.]

Blue Smoke CD-ROM BBS. (510)455-5587. 24 hrs., 2400/9600/14,400. Access 9000 files, fidonet, email, matchmaker. No ratio, free. [Exp. #107.]

Breaking Walls; Building Bridges BBS. (510)827-0804. 8-N-1, 24 hrs., 300/1200/2400. Gay/Lesbians, church, AIDS, community forums, news, counseling. Sysop: Deacon DVMCC. [Exp. #106.]

Bust Out BBS. (510)881-5427. 24 hrs., 14,400. Four nodes, 2GB, huge msg and file network (including adult). Computer systems and software services. Sysop: Alex J. Riggs. [Exp. #106.]

California High-Flyers BBS. (510)568-9250. 8-N-1, 24 hrs., 300/1200/2400. More Bay Area numbers, nine lines, chat, email, library. Ages 10 and up. Two subscription levels. Sysop: Carl Dominic. [Exp. #107.]

Classified Ads, Jobs, & Matchmakers Online. (510)687-3663. 9am-10pm, 1200/2400/9600. Select DATES and match your interests with other users discretely. Select JOBS or Users, to guide you to career opportunities. [Exp. #107.]

Classified BBS-Net SL. (510)481-8217. Supports all systems, 2.5GB, multi-line. [Exp. #106.]

Compu-Ace RBBS. (510)794-

4029.9600. Files, games, msg., Turbo Pascal Programmers conference, and more. Member of BAY-LINK. Sysop: Scott A. Mercer. [Exp. #106.]

Computer Communications BBS. (510)672-9325. 8-N-1, 14,400. Member of Fidonet, PowerNet, and Mustang Software's Support Net echos. [Exp. #107.]

Delta BBS. (510)778-3714. 24 hrs., 1200/2400/9600/14,400. 40+ online games, msg bases, and transfer section w/out ratios. Free. Sysop: Phantom. [Exp. #107.]

The Diamond Mind. (510)791-1910. 8-N-1, 24 hrs., 300/1200/2400/9600/14,400. Emotional support, IBM and Mac files, Fido echos, chat, online games, adult areas. Free user level. Sysop: Diamond & Frank. [Exp. #106.]

DVPC BBS. (510)943-6238. 8-N-1, 300-14,400. [Exp. #107.]

Easy Access BBS. (510)829-7627. San Ramon, Internet/Usenet/Smartnet, DOS and Windows. Subscription \$4. Free access too. [Exp. #105.]

Fantasies Adult BBS. (510)632-1590. 8-N-1, 24 hrs., 300/1200/2400. XXX—this is an adult lifestyles BBS with worldwide echo networks and local personals. [Exp. #106.]

Francolies. (510)651-3192. 1200/2400/9600. The French BBS of the Bay Area: online games, electronic newsletter, msg in French or English. No fee. Co-Sysop: MEJV. [Exp. #106.]

Fred Haney & Sons BBS. (510)792-5119. 8-N-1, 24 hrs., 2400. Software, Windows, etc., Fremont. Free. [Exp. #106.]

FrEdMail SnIndro. (510)895-1785. 1200/2400/9600. Educator/student network with Internet mail access, San Leandro HS, NorCal Hub. [Exp. #106.]

Friendly BBS. (510)432-7802. 300/1200/2400/9600. Upload/Download. Sysop: Doyle Goodman. [Exp. #106.]

Galaxy BBS. (510)623-8933. 24 hrs., 300/1200/2400/9600/14,400. Provides support to Galaxy Multimedia Audio/Video products. Sound, music, games, DOS, and Windows. [Exp. #107.]

The Gift Ship BBS. (510)689-4986. Adult graphics: straight, gay, lesbian, bi, tv, bondage, S&M. Sysop: Waik Gan. [Exp. #106.]

GMV-BBS. (510)294-9052. 24 hrs., 300/1200/2400. Multiline subscription BBS. Teleconference, private chat, email, SIGs, games, and file library for Amiga, IBM, Apple 8-bit, and Mac. Livermore. [Exp. #105.]

Gold Diggers BBS. (510)568-7807. 24 hrs., 2400-19,200. Messages and files, mostly

IBM. Registration. Fees \$10/yr. Sysop: Harry H. Goldberg. [Exp. #106.]

Grateful Med BBS. (510)689-0347. 8-N-1, 24 hrs., 1200/2400. Health professionals Fidonet/ADANet. Sysop: TC Dufresne. [Exp. #105.]

The HomeShopper Online. (510)687-3633. 8-N-1, 1200/2400/9600. Hardware, software, and services. Sysop: Max. [Exp. #107.]

IDC BBS. (510)865-7115. 814-8097. 8-N-1, 9600. Alameda, 340MB, 775+ confareas, Qmail 4.0, PCBoard, ILink, RIME BizNet. Sysop: Mike King. [Exp. #106.]

IISME-Net. (510)643-6258. 300/1200/2400/9600. Initiatives for Science & Math Education, Lawrence Hall of Science, K-12net educator/student network with Internet mail access. [Exp. #106.]

Initiative BBS. (510)654-2253. 8-N-1, 300/1200/2400. A political board established to support the Committees of Correspondence. Devoted to documents and discussion related to the left in this country and the future of the left. Sysop: Steve Willett. [Exp. #107.]

Kanon Tech BBS. (510)235-6839. 8-N-1, 24 hrs., 300/1200/2400/9600/14,400. C libraries, shareware, Echomailnet, commercial software/hardware online store. [Exp. #107.]

Knight Court BBS. (510)946-1049. 2400/9600/14,400. NFL, sports, gambling, chess, and 40+ doors. No charge, no hassle, no kidding. [Exp. #106.]

'Lectrick Blue. (510)376-3805. 798-7705, 525-5332. 8-N-1, 1200/2400/9600/14,400. Internet, Usenet, WWIV-Net, WWIV-Link, VBBS-Net, Fido, Adult-Net, Icenet, 100+ msg bases, games, and more. [Exp. #106.]

Linkages International. (510)547-2162. 8-N-1, 24 hrs., 300/1200/2400. News, science and technology, African and African American culture. [Exp. #105.]

The MAD Board. (510)893-7410, 465-3219. 14,400. Online games, TW2002, EC, GWar, and The Pit. Free, 90 min./day. [Exp. #105.]

MDBJ. (510)658-8078. 2400. A BBS for women on the edge. NIRVANAnet. [Exp. #107.]

Mutant Valley BBS. (510)294-9052. 24 hrs., 300/1200/2400. Multiline information exchange. [Exp. #105.]

The New-Ark BBS. (510)796-0947. 24 hrs., 2400/9600. Tradewars, running on two CD-ROMs. Reg required. Sysop: Hiram Wolf. [Exp. #106.]

Night Creatures BBS. (510)481-9774. 24 hrs., 300/1200/2400/9600/14,400. Files, msg., online games, TrueType

fonts. Beginners welcome. Free access. Sysop: [Exp. #106.]

NightLine BBS. (510)234-1053. 1200/2400/9600/14,400. Nationwide Echo link for veterans' and men's issues conferences. Free. Sysop: Jon Mankowski. [Exp. #107.]

Off Broadway's AutoCAD BBS. (510)547-8801. 8-N-1, 300/1200/2400/9600. Dedicated to supporting AutoCAD. Message base free and non-members can download one file a day. Unlimited membership, \$50/yr. Sysop: Robert Schutz. [Exp. #106.]

Olde Stuff BBS. (510)530-3051. 8-N-1, 24 hrs., 2400. Antiques & Collectibles. Buy, sell, learn. Sysop: Bill Clark. [Exp. #106.]

Omikron BBS. (510)657-8820. 24 hrs., 14,400. Mac files and discussions. Fremont. No download limits. Free access. [Exp. #107.]

The Party Warehouse BBS. (510)256-9809 (1200/2400), 256-8979 (4800-38,400). 10 networks, UUCP, Internet, and more. Games and files, full access first call, over 150 message bases. [Exp. #106.]

The Phantom Zone BBS. (510)538-9586. 8-N-1, 24 hrs., 300/1200/2400/9600/14,400. Online games, offline mail reader. Free access. Sysop: Paul Graydon. [Exp. #107.]

Pittsburg Pirates BBS. (510)432-2927. 24 hrs., 300/1200/2400/9600. Running OMNI 128 and OMNI-Net, msg. bases, UL/DL areas. C64/128 board, but all welcome. Sysop: Slowhand. [Exp. #106.]

Psychic Link BBS. (510)849-5939. 24 hrs., 2400. Share with others interested in psychic abilities and energy. International caller base. Shareware. [Exp. #106.]

Rat Head Systems. (510)524-3649. 2400. Virtual gutter for digital derelicts. Instant access. NIRVANAnet. No fee. [Exp. #105.]

Realitycheck. (510)527-1662. Moved to Albany. Instant access, no fee. NIRVANAnet. [Exp. #107.]

Records Dept. BBS. (510)426-0470 (2400), 426-0793 (14,400). Amiga, IBM, and Mac. Free. Extras for subscribers—Fidonet, games, chat. Sysop: Paul Tibbals. [Exp. #107.]

The Road Not Taken. (510)848-5248. Active message bases; friendly, non-technical atmosphere. [Exp. #105.]

Sir James BBS w/ Magick Resource Center. (510)261-6567. 300-14,400. Magick, Pagan, SCA Music, Adult, MIDI, Music, Soundblaster, Windows, games. Reg req., free. Sysop: Sir James. [Exp. #105.]

Testing 1,2,3...BBS. (510)373-0873. 24 hrs., 1200/

2400/9600. IBM/Mac, messages, shareware files, nine lines. Livermore. Sysop: Corey L. Nelson. [Exp. #106.]

Tiger Team. (510)658-0607. 14,400. Games, data encryption, PC Security & Virus Prevention. Firearms conference. Free. [Exp. #107.]

Trafalgar BBS. (510)735-3230. Online games, files, email, easy access. Auto-validation. Sysop: Lord Nelson. [Exp. #105.]

The Transfer Station BBS. (510)837-4610, 837-5591. 8-N-1, 24 hrs., Free Internet/USENET access. Lrg. DOS/Windows/OS2 library. No fees. [Exp. #106.]

Vericom BBS. (510)891-0303. 24 hrs. UFOs, conspiracies, occult, Phoenix liberator. [Exp. #105.]

Viper 1 Premium BBS. (510)535-0231, 535-0315. 8-N-1, 24 hrs., 2400/9600/19,200. Multiline, 900MB, 1.3GB online, large adult file areas, games, file scanning facilities online. [Exp. #107.]

WelchNet Pleasanton. (510)417-0444. 1200/2400/9600. Finance and investment-related files, msg. areas. No fee. Sysop: Mark J. Welch. [Exp. #106.]

Wild At Heart. (510)689-WILD. 300/1200/2400. VirtualNet BBS, high access for first-time callers. The BBS with heart! Sysop: Steve Rochin. [Exp. #106.]

Windows Online. (510)736-8343. Over 6000 Win 3.x & 11,000 DPS files, 5GB, 13 lines using USR-DS modems. Free trial. [Exp. #106.]

Winshare BBS. (510)686-4464. 1200/2400/9600. Multinode, your new connection point for Windows shareware/support files. Running Wildcat! Free. [Exp. #106.]

Wishing Well BBS. (510)745-7901. 24 hrs., 300/1200/2400. Email, matchmaker, files, 100+ online games, adult sig/files. Free. [Exp. #106.]

World Conquest BBS. (510)689-4095. 24 hrs. Internationally known wargame, free trial game. Log game request w/sysop. Sysop: [Exp. #105.]

Worldview BBS. (510)676-2919. 8-N-1, 24 hrs. 1200-14,400. Reformed Christian perspective, files/discussion on philosophy, public policy. \$49/

yr. Sysop: Bill Gram-Reefer. [Exp. #106.]

707

The Black Rose. (707)557-6444. 24 hrs., 300/1200/2400. Commodore 64/128 BBS, running Image v1.2a and a NISSA Network Assoc. ANSI graphic menu, health msg. Sysop: Captain Keelhaul. [Exp. #107.]

Dave & Jean's BBS. (707)554-3801. 8-N-1, 300/1200/2400/9600/14,400. IBM, online games, files, msg., and more. Free access. Sysop: Dave & Jean J. [Exp. #107.]

Dobbs Enterprises. (707)427-0277. 300/1200/2400/9600. Part of WIVinet conference. 24,000+ files. [Exp. #106.]

Mnemonic BBS. (707)451-8353. 300/1200/2400/9600/14,400. CD-ROM 7,000 files, netmail, doors. [Exp. #106.]

Recommended BBS. (707)448-2225. 24 hrs., 300/1200/2400. Multiuser games, teleconference, conversational and technical areas, 16 lines. All welcome. Sysop: Jay C. Parangalan. [Exp. #107.]

Threat Management Institute BBS. (707)935-1713. 8-N-1, 24 hrs. Conferences dealing with issues of personal defense, firearms, law, etc. Schedule of TMI Classes. No Fees. Sysop: Peter Alan Kasler. [Exp. #105.]

UNIX Online. (707)792-0402, 795-1721. 24 hrs., Usenet access. For UNIX, Amiga, Mac, and DOS users. [Exp. #106.]

User Friendly BBS. (707)645-8894. 8-N-1, 24 hrs., 9600. IBM/Amiga, NCNet, MSINet, msg., sci-fi/fantasy info and reviews, doors. Sysop: Jim K. [Exp. #106.]

Virtual Reality. (707)539-6944. 6 pm-8 am, 300/1200/2400. Message bases, games, Amiga support. Sysop: Bryan Magers. [Exp. #105.]

The Wind Tunnel. (707)421-0380. 24 hrs., 1200/2400/9600/14,400. Windows programs and utilities, WAV's, GIF's, doors, and conferences. Sysop: John Wright. [Exp. #107.]

916

24th Street Exchange. (916)451-7179. 8-N-1, 24 hrs., 300/1200/2400/9600/14,400. 16 lines, 4 CD-ROMs, well-maintained. [Exp. #106.]

TELL 'EM YOU SAW IT IN
MICROTIMES

NETWORKING... OVERNIGHT!!

**With Our Pre-Configured Systems,
Your Network Installation Will BE
An Overnight Success!**

MAKE A SMART BUSINESS DECISION!

Plug In And Run! You Can't Do Anything Wrong With Our Pre-Configured System. By Our Experienced Staff, Your Network Will Be Built, Configured, Software Loaded, Cabling Sized To Your Exact Needs and System Completely Tested Before It Goes To Your Installation Site. You Would Only Spend Your Very Valuable Time On Your Productive Applications. **So Call M.W. Computers Today And Find Out How We Can Help You Make A Smart Business Decision!** Optional Installation and Custom Configuration Are Also Available.

PRE-CONFIGURED NETWORK BUNDLES Call For Latest Prices & Custom Configuration & Upgrade

Network System	Server/Workstation	Workstations
250 User \$119,955	486-33MHz 4MB RAM	386SX-25MHz 1MB RAM
100 User \$ 66,995	1.2 & 1.44 Teac Dr. 120MB Hard Disk	Serial/Paral Pts Ethernet Card
50 User \$ 34,565	Ethernet Card(10M/s) 1:1 Hard Disk Card	Monitor Monitor Card
10 User \$ 8,325	2 Serial 1 Paral Ports Monitor & Card	Network Cable Novell
5 User \$ 4,555	Tape Backup Dr.	Netware Software

MW

COMPUTER



M. W. COMPUTER
A Technology Manufacturer
TEL: (510) 659-8812

- We only use the most reliable products
- We run thoughtfully 72 hours burn-in
- Our lowest prices policy would save you money like hundred thousands of other customers
- Our staffs are committed to serve you
- Corporate PO are welcome
- Prices on ad is based on cash prepaid only
- No surcharge for COD, cash & credit card
- Price, availability subject to change w/o notice
- UPS nationwide daily, buyers pay freight
- Not responsible for typo errors
- Manufacturing personal computers since 1986, A California Corporation

46713 Fremont Blvd
Fremont, CA 94538
FAX: (510) 659-8526
Mon-Fri: 8:30-5:30 PST

SOME OF OUR SATISFIED CUSTOMERS!

- *FMC Corporation
- *University of Florida
- *Procter & Gamble
- *University of Miami
- *Lockheed Missile
- *San Francisco State University
- *Seagate Magnetic
- *U.S. Navy Command
- *Bank Of Pleasanton
- *University of Michigan
- *Plus Many Others

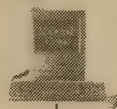


LANtastic
ARTISOFT INC.

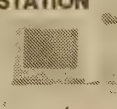
intel



MACINTOSH



UNIX
WORKSTATION



PC



NETPAK
FILESERVER



LAPTOP PC



PC



REMOTE
PC SHELL



SUPER SERVER CALL FOR PRICES & CONFIGURATION

- 486, 66, 50, 40, 33MHz EISA or ISA
- *630MB Hard Disk 16ms *32MB
- * 1.2 & 1.44MB Teac Floppy drives
- * Serial/Paral Ports *Monitor & card
- * Network Card * Netware Software

SUPER WORKSTATION CALL FOR PRICES & CONFIGURATION

- 486, 66, 50, 40, 33MHz EISA or ISA
- * 4MB Installed * Network Card
- * SVGA Monitor and SVGA card
- * Network card * Serial /Parallel

CARDS/HUBS

Ethernat 10Base T 16Bit	\$135
Ethernet 16 Bit card cx	\$120
Ethernet 8 Bit card coax	\$ 90
Arcnet 16 Bit card coax	\$ 75
Arcnet 8 Bit card coax	\$ 55
Arcnet 16 bit twist pair	\$ 80
Arcnet 8 bit twist pair	\$ 60
Ethernet 10 port 10BT	\$570
Ethernet 8 Port 10BT	\$425
Ethernet 5 Port 10BT	\$325
Arcnet 8 pts Active Hub	\$195
Arcnet 4 pts active Hub	\$ 95

Network Accessories

NOVELL	
Netware	\$CALL
UPS 400W	\$320
UPS 600W	\$410
UPS 900W	\$640
Tape Backup Dr. 120MB	\$225
Tape BackUp Dr. 250MB	\$270
RG58/RG62 BNC Crper	\$ 75
RJ-45 Twist Pair Criper	\$ 50
50 or 95 Ohm Terminato	\$ 5
Arcnet Passive Hubs	\$ 30
Network FAX Gramma	\$765
CDROM NEC Int	\$635
15' or 25' assembled cable	\$ 20

ASSOCIATIONS

American Association For Artificial Intelligence (AAAI). Call: (415)328-3123. Email: membership@aaai.org. [Exp. #107.]

Association For Women In Computing. Meetings: 1st Wed., 5:30 pm, San Francisco. Call: (415)979-8450. [Exp. #107.]

The Association For Worldwide Software Support Management. Meetings: 2nd Tues., Milpitas Sheraton. Call: Mikael Blaisdell, (415)865-1323. [Exp. #109.]

Association Of Database Developers (ADD). Meetings: 2nd Thurs., 7:00 pm, The Gatehouse, Fort Mason Center, San Francisco. Organization for professional xBASE language systems developers. Membership \$50/yr or \$5/meeting. Call: JoAnn, (415)863-6706. [Exp. #105.]

The Black Data Processing Associates, Silicon Valley Chapter. Meetings: 4th Thurs., 6:30 pm, Amdahl Corp., Sunnyvale. Call: Doug Jones, (408)737-5999. [Exp. #105.]

Computer Professionals For Social Responsibility. Meetings: 2nd Wed., 7:30 pm, UC Berkeley, Evans Hall, Rm. 608-7. Call: Judy Stern, (510)643-

7499. [Exp. #109.]

Data Processing Management Association. Call: (415)978-0868. [Exp. #105.]

IEEE Computer Society, San Francisco Chapter. Meetings: Varying Weds, 7:00 pm, SF State. Call: (415)905-4400. [Exp. #109.]

Independent Computer Consultants Association, Northern California Chapter. Meetings are open to all. Only national trade assoc. comprising non-aligned working computer professionals with in-the-trenches experience. Call: ICCA, (415)441-2948. [Exp. #106.]

International Network Of Women In Technology. Dedicated to significantly increasing the leadership of Women in Technology in industry and government. Call: Dr. Carolyn Turybfill, (415)336-1007. Email: Carolyn.Turybfill@Eng.Sun.COM. [Exp. #105.]

North Bay Systems Professionals. Meetings: 3rd Wed., 7:00 pm, Holiday Inn, Terra Linda, 1010 Northgate Dr., San Rafael. NBSP provides a forum and network for systems professionals. Call: Harry Chapman, (415)291-0174. [Exp. #109.]

Robotics Society Of America. Meetings: 2nd Mon., 8:00 pm, Exploratorium Library, San Francisco. Call: Brad Smallridge, (415)550-0588. [Exp. #106.]

Society For Technical Communication, Berkeley Chapter. Meetings: 2nd Wed., 6:00 pm, Yenching Restaurant, 2017 Shattuck Ave., Berkeley. Call: Rich Julius, (415)837-0397. [Exp. #106.]

Society For Technical Communication, San Francisco Chapter. Meetings: 3rd Wed. Call: (415)985-7121. [Exp. #107.]

Software Entrepreneurs' Forum. 3rd Wed., 6:30 pm, Elk's Lodge, 4249 El Camono, Palo Alto. Industry association dedicated to software developers and entrepreneurs, offering information and education on all facets of the software industry. Call: Information, (415)854-7219; reservations, (415)965-9003. [Exp. #109.]

United Sysops Association. Meetings: 2nd Wed., 7:00 pm, Coco's, 1035 S. Mary Ave., Sunnyvale. Organization of bulletin board sysops and users. Call: Bill Strouse, (408)739-9081. BBS: (408)739-8753. [Exp. #109.]

USER GROUPS

(415)829-6027. [Exp. #106.]

AT&T Computer User Group, South Bay. Meetings: 3rd Wed., general discussion at 6:30 pm, meeting begins at 7:00 pm, location varies. MS-DOS. Call: Barbara Kievian, (408)371-0215. [Exp. #106.]

AT&T UNIX Computer User Group, South Bay. Meetings: 4th Wed., program begins at 7:00 pm, location varies. Call: Thad Floryan, (408)985-7100; U S E N E T, thad@cup.portal.com. [Exp. #106.]

ATARI

BAAUG (Bay Area Atari Users Group). Meetings: 1st Mon., 7:00 pm, Agnews Aud., Santa Clara. Call: Andres Barbiero, (408)986-9787. BBS: (408)986-0215. [Exp. #107.]

DACE—Diablo Atari Computer Enthusiasts. Meetings: 1st Thurs., Contra Costa Water District Bldg., 1331 Concord Ave., Concord. Call: Dan Galant, (510)689-8256. [Exp. #109.]

CAD/CAM

SF Bay Area AutoCAD/DCA Software User Group. Meetings: 3rd Wed., 6:30 pm. All CAD users welcome. Call: Michael Foley, (510)734-0707. [Exp. #105.]

COMMODORE

ACCESS—Amiga & Commodore Computer Enthusiasts Society. Meetings: 2nd Thurs., 7:00 pm, Livermore Airport Terminal. Call: Paul, (510)829-6053. [Exp. #109.]

CAVE—Commodore Amiga Video Enthusiasts. Meetings: Every other Sat., 8:00 pm, 304 Springs St., Old Suisun. Call: Ron, (707)421-2283. [Exp. #105.]

CWEST Commodore 64/128. Meetings: 3rd Mon., 7:00 pm, Conference Room, Laguna Honda School, 1350 7th Ave., San Francisco. Call: (415)626-9946. [Exp. #109.]

CONTACT MANAGEMENT

Bay Area TeleMagic User Group. Meetings: 2nd Wed., 4:00 pm. Call: George Workman, (408)476-6385. [Exp. #110.]

The Golden Gate Telemagic User Group. Meetings: 2nd Wed., 4:30 pm, Flood Bldg., Room 1213, 870 Market St., San Francisco. Call: 1-800-238-3370. [Exp. #109.]

CP/M

San Francisco Computer Society. Meetings: 7:00 pm, Laguna Honda School, 1350 7th Ave., San Francisco. Call: Ralph

Gallegher, (415)929-0252. [Exp. #109.]

DBASE

Association Of Database Developers, dBASE SIG. Meetings: 4th Tues., 7:30 pm, The Gatehouse, Ft. Mason Center. \$5.00 guest fee, free to ADD members. Call: (415)281-5638. [Exp. #110.]

Association Of Database Developers, Fox SIG. Meetings: 1st Thurs., 7:00 pm, PG&E Tower, 77 Beale St., Rm. 1760. \$5.00 guest fee, free to ADD members. Call: (415)281-5638. [Exp. #110.]

DESKTOP PUBLISHING

Bay Area Desktop Publishing User Group. Meetings: 1st Wed., 7:00 pm, Nisha Software, 2493 Telegraph Ave., Berkeley. Topics include editing and publishing as a career. Call: (510)848-8200. [Exp. #105.]

Golden Gate Computer Society DTP SIG. Meetings: 3rd Thurs., 7:00 pm, Conference Room, Bay Area Training facilities, 4340 Redwood Highway, Suite 138-F, San Rafael. Call: (415)485-1871. [Exp. #105.]

San Mateo County Ventura Publisher User Group. Meetings: 3rd Mon., 6:45 pm, San Mateo ROP, 1800 Rollins Rd., Rm. 14, Burlingame. Call: Elinor Cruze, (415)366-5317. [Exp. #106.]

FREEDOM, PRIVACY, AND TECHNOLOGY

BMUG SIG On Freedom, Privacy, And Technology. Meetings: Last Sun., 2:00 pm, BMUG office, 2055 Center St., Berkeley. Call: Judi Clark, (510)549-2684. [Exp. #110.]

GENEALOGY

Family Tree Hackers. Meetings: 2nd Wed., 7:00 pm, 34009 Alvarado-Niles Rd., Union City Council Chambers Office. For more info write: 32108 Alvarado Blvd., #105, Union City, CA 94587. [Exp. #110.]

IBM AND COMPATIBLES

Alameda Computer User Group. Meetings: 2nd Wed., 7:30 pm, Social Hall, Temple Israel, Island Dr. and Mecartney Rd. Providing an informal forum for both Macintosh and PC users to explore questions about hardware and software. Call: (510)523-1139. [Exp. #106.]

Berkeley PC User Group. Meet-

ings: 2nd Mon., 7:00 pm, Winners Circle Systems, 2618 Telegraph Ave., Berkeley. Presentations followed by discussion, PD library, newsletter, Geo Ensemble SIG. No charge. Call: Mel Mann, (510)526-4033. [Exp. #110.]

Delta PC Users Group. Meetings: 3rd Sat., 10:00 am. Pittsburg Adult Ed., Rm. 23, 20 E. 10th St. Call: (510)427-2255, ext. 744. [Exp. #110.]

DVPC—Diablo Valley User Group. Meetings: 1st Thurs., 7:30 pm, Bank of America Bldg. B, Clayton Rd. at Galindo, Walnut Creek. SIGs include WordPerfect, Windows, Paradox, Beginner's, Visual Basic, education/entertainment, and new users. Call: (510)943-1367. [Exp. #110.]

EastBay FOG. Meetings: 2nd Wed., 7:30 pm, Episcopal Church of St. John-in-Montclair, 1707 Gouldin Rd., Montclair. All microcomputers, MS-DOS, CP/M. Call: (510)653-2627. [Exp. #105.]

Golden Gate Computer Society (GGCS). Meetings: 4th Mon. 6:45 pm, San Rafael Community Center. Free intro to computers class at 6:00 pm. Call: (415)927-2909. [Exp. #106.]

IBM Technical SIG. Meetings: 2nd Thurs., 7:00 pm, Cubberley Community Center, 4000 Middlefield Rd., Rm. H-1, Palo Alto. Sponsored by Software Entrepreneurs' Forum. Call: Peter Harris, (415)329-1880. [Exp. #106.]

Micomate—CP/M-DOS Users Group. Meetings: 1st Thurs., 7:30 pm, Eclectic computer buffs. Chabot Observatory, 4917 Mountain Blvd., Oakland. Call: Ed Miller, (510)376-1611. [Exp. #109.]

PC BasicS: Silicon Valley Computer Society SIG. Meetings: 3rd Mon., 7:30 pm, 847 W. Maude Ave., Sunnyvale. Talks presented by Rich Wingerter of Zip Consulting & Design. Call: (415)326-2435. [Exp. #105.]

PC Clone User Group. Meetings: 2nd Mon., 7:00 pm, Ft. Mason, Rm. C217. Visitors \$3. Call: (510)684-0107. BBS: (415)652-1736 [Exp. #110.]

PC Users Group Of The Redwoods (PCUGR). Meetings: 2nd Thurs., 6:30 pm, Santa Rosa Veterans Memorial Building. Call: (707)527-USER. [Exp. #110.]

Peninsula Computer Club. Meetings: 2nd Thurs., 7:30 pm, Social Room, 222 Laurel St., San Carlos. DOS and CP/M libraries. Call: Larry Welling, (415)593-9981. BBS (415)571-9259. [Exp. #109.]

San Francisco Business Computers. Meetings: 4th Tues., 5:30 pm. For those who use

USER GROUPS

ACCESS

Microsoft Access Developers Group. Now forming. Downtown San Francisco. Send name, address, and fax # to receive meeting and membership info, to: Computer/Management Solutions, 235 Montgomery St., #750, SF, CA 94104 [Exp. #110.]

ACCOUNTMATE

AccountMate User Group. Meetings: 3rd Tues., 7:00 pm, S. Branch Berkeley Library, 1901 Russell St. Call: Joshua, 1-800-310-0262. [Exp. #106.]

ADOBE

Systems Adobe Technology Exchange: San Francisco Peninsula/South Bay Chapter. Meetings: 2nd Wed., 7:00 pm, M&T Publishing, 411 Borel Ave., San Mateo. Call: ATX, (408)562-6104. [Exp. #109.]

AMIGA

3rd Dimension—Imagine/Lightwave User Group. Meetings: 1st & 3rd Mon., Computer Showcase, 2739 Geary Blvd., SF. Call: Ollie, (415)863-8792. [Exp. #110.]

AAA—Amiga Addicts Anonymous. Meetings: 3rd Tues., Concord Water District Bldg., 1311 Concord Ave. Classes,

monthly disks, info line. Call: (510)935-0829. [Exp. #109.]

ACCESS—Amiga & Commodore Computer Enthusiasts Society. Meetings: 2nd Thurs., 7:00 pm, Livermore Airport Terminal. Call: Paul, (510)829-6053. [Exp. #109.]

Amiga User Group—Germany. German Amiga user group is seeking contacts in the US. Contact: Nils Wietelmann, Unter den Heestern 28, W-2839 Kirchdorf, Germany. [Exp. #106.]

AUM—Amiga Users Of Marin. Meetings: 3rd Wed., 7:30 pm, College of Marin Science Center, Rm. 190. Beginners class at 6:00 pm. Call: (415)456-1411. BBS: (415)485-5895. [Exp. #109.]

AWEST Amiga Users In SF. Meetings: 1st Thurs., 7:00 pm, Laguna Honda School, Conference Rm., 1350 7th Ave., San Francisco. Call: (415)584-8406. [Exp. #109.]

FAUG—First Amiga User Group. Meetings: 1st Tues., 7:30 pm, HT Electronics, 275 N. Matilda Ave., Sunnyvale. Q & A, new product demos, public domain software. Call: Mike Fisher, (415)855-9426; BBS: (415)595-2479; Usenet: mike@hpspd.hp.com. [Exp. #106.]

Redwood Empire Amiga. Meetings: 3rd Tues., 7:30 pm, Santa Rosa Plaza, Community Room. SIGs meet throughout month. Call: (707)523-9978. BBS: (707)795-2717. [Exp. #109.]

TOGA—The Other Group Of Amigoids. Meetings: Varying Sat., 12:30 pm, Milpitas Library, 40 N. Milpitas Blvd. Call: Lawrence Brown, (408)984-6036. [Exp. #108.]

APPLE

PAUG—Peninsula Apple User Group. Meetings: 3rd Thurs., 7:00 pm, Ampex Cafeteria, 411 Broadway, Redwood City. Call: Roger Laker, (415)367-8657. [Exp. #109.]

Tri-Valley Apple II User Group. Meetings: 1st Wed., 7:00 pm, Glendale Federal Bank, 3101 Crow Canyon Place, San Ramon. Come and learn more about your computer. Support II+, IIc, IIe, IIgs. Call: (510)828-0959. [Exp. #105.]

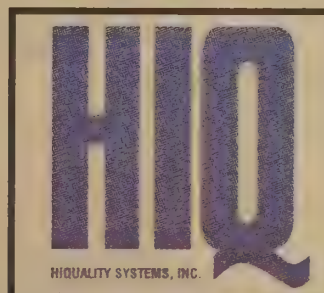
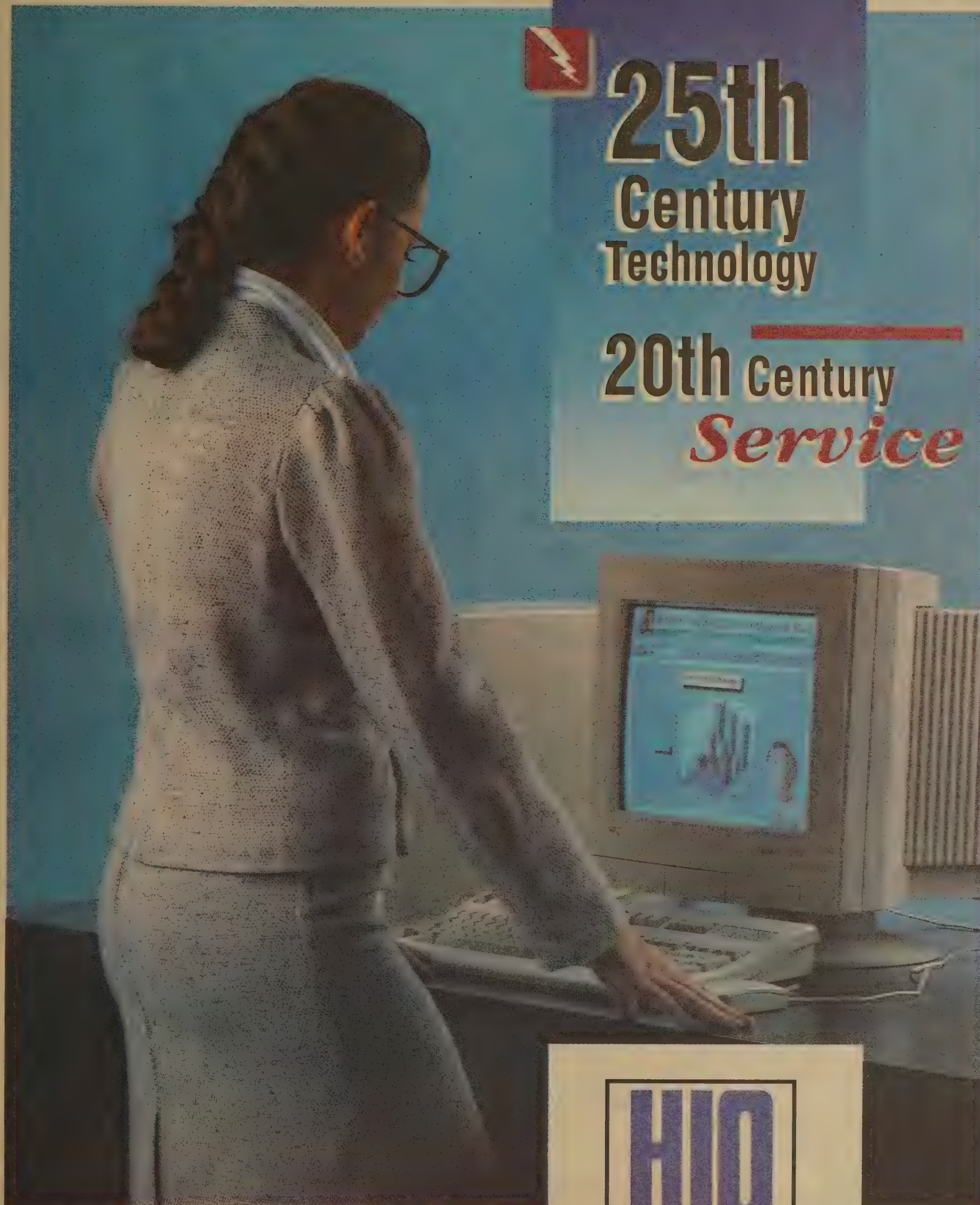
AT&T

AT&T Computer User Group, North Bay. Meetings: 1st Wed., general discussion at 6:00 pm, meeting begins at 7:00 pm, San Francisco AT&T Bldg., 50 Fremont St. MS-DOS and UNIX. Call: Jim Lansing, (415)885-6631 or Joe Mahoney, (415)584-6510; BBS



**25th
Century
Technology**

**20th Century
*Service***



FREE Lifetime Technical Support!

30 Day "No Questions Asked" Money-Back Guarantee 90 Day, Credit Available*

One Year Parts and 2 Years Labor Warranty On-Site/Extended Warranties Available

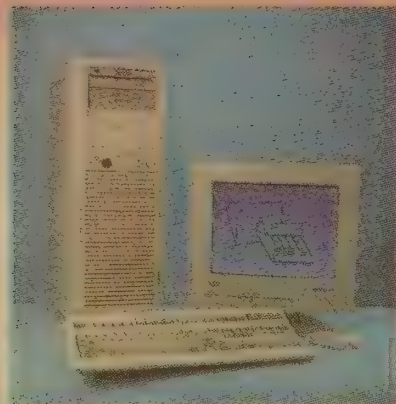
Customized Configurations and Leasing Corporate and Government PO's Welcome

*Subject to Credit Approval

"HiQ has always provided the kind of service I look for in selecting a vendor to work with.

I know I can count on you to continue to provide us with real value for our money."

- Sandra E Thurman
Systems Analyst for
Amdahl Corporation



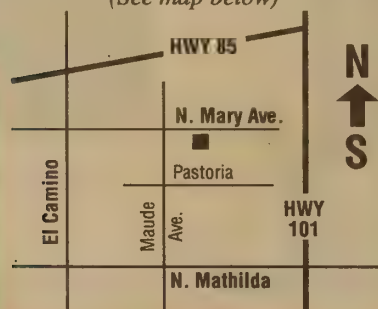
**This System
is Capable
of Running
Marathons!**

HiQ Super Power 4DX2-66VLB System

When you need a system to run Local Area Networks or Scientific and Graphics applications efficiently, this Top-of-the-Line system offers you Power, Speed and Dependability. The HiQ Super Power 486DX2 is built with the highest quality parts available, such as Intel's Lightning-fast 486DX2-66MHz Microprocessor and the Micronics High-end motherboard!

- Intel 486DX2-66MHz Processor
- Micronics VESA Local Bus motherboard
- 4MB RAM (70ns) exp. to 64MB
- 256K SRAM Cache
- 2-VESA LB, Six 16-Bit Slots
- 1.2MB and 1.44MB Teac Floppy Drives
- 240MB Quantum/IDE HDD w/256K Cache
- Integrated 32-Bit Local Bus IDE controller w/ 2S, 1P port
- ATI Ultra Pro Local Bus SVGA Card w/1MB VRAM
- 15" NEC 3FGX SVGA Color Monitor,
- Non-Interlaced 1024x768, 0.28dp, Flat-screen
- 101 Enhanced Waterproof keyboard
- Mid Tower Case w/230W Power Supply

Stop by our convenient Sunnyvale Store
(See map below)



**FREE
Software!**

Only
\$2959



**33MHz
of Pure
Dependability
and Power!**

HiQ Power 433VLB System

Light Years ahead of the competition, This HiQ System processes Video Images 10 TIMES FASTER than standard ISA systems - perfect for AutoCad or Windows.

- Intel 486DX-33MHz Processor
- Micronics VESA Local Bus motherboard
- 4MB RAM (70ns) exp. to 64MB
- 256K SRAM Cache
- 2-VESA LB, Six 16-Bit Slots
- 1.2MB and 1.44MB Teac Floppy Drives
- 170MB Western Digital/IDE Hard Disk Drive
- Integrated 32-Bit Local Bus IDE controller
- w/ 2 Serial, 1 Parallel port
- VESA Local Bus 32-Bit SVGA Card w/1MB RAM
- 14" Viewsonic 6E SVGA Color Monitor,
- Non-Interlaced 1024x768, 0.28dp
- 101 Enhanced Waterproof keyboard
- Mid Tower Case w/230W Power Supply

**FREE
Software!**

Only
\$1969

FREE!

Hi-Res Mouse, MS Windows 3.1 & MS DOS 5.0
w/Manuals FREE with ALL Desktop Systems!

Northern California Locations:

South Bay

740 N. Mary Ave., Sunnyvale, CA 94086
(408) 245-5836, Fax: (408) 245-3108

Marin County

2048 Fourth St., San Rafael, CA 94901
(415) 459-1893, Fax: (415) 459-7248

Stockton

1588 East March Lane, Stockton, CA 95209
(209) 472-7269, Fax: (209) 472-7269

Sacramento

11015 Olson Drive, Rancho Cordova, CA
(916) 863-7076, Fax: (916) 863-7098



Hi-Q Ultimate 433I/450I Systems

For Business People Who Need a Powerful, Reliable System to Get the Job Done.

- Intel 433I-33/486DX-50 Processor
- 64K SRAM Cache 4MB RAM
- 1.2MB and 1.44MB Teac Floppy Drives
- 170MB IDE Conner HDD w/32K Cache
- IDE controller 2H/2F
- 2 Serial, 1 Parallel and 1 Game ports
- Trident OEM SVGA Card, 16-Bit, 1024 x 768 w/1MB RAM
- 14" SVGA Color Monitor 1024x768, 0.28dp
- 101 Enhanced Waterproof keyboard
- AT Desktop Case w/220W Power Supply

Only \$1519/\$1729

Hi-Q Ultimate 43VLB/ 44DX2-66VLB Systems

The Computer for Creativity. This Versatile System Allows You to Create the Most Impressive Graphics!

- Vesa Local Bus
- Intel 433DX-33/486DX2-66MHz Processor
- 4MB RAM (70NS) Exp. to 32MB
- 64K SRAM Cache
- 1.2MB and 1.44MB Teac Floppy Drives
- 170MB IDE Conner HDD w/32K Cache
- Vesa Local Bus 32 Bit IDE controller 2H/2F w/ 2 Serial, 1 Parallel and 1 Game ports
- 14" SVGA Color Monitor 1024x768, 0.28dp
- 101 Enhanced Waterproof keyboard
- AT Desktop Case w/220W Power Supply

only \$1659/\$1869



Hi-Q Ultimate 340DX/425SX Systems

An Affordable System that has the Power to Run the most Complex Accounting Programs!

- AMD 386DX-40MHz Processor or Intel 486SX-25MHz Processor
- 4MB RAM (70ns) Expandable to 32MB
- 64K SRAM Cache
- 1.2MB and 1.44MB Teac Floppy Drives
- 170MB IDE Conner HDD w/32K Cache
- IDE controller 2H/2F
- 2 Serial, 1 Parallel and 1 Game ports
- Trident OEM SVGA Card, 16-Bit, 1024 x 768 w/1MB RAM
- 14" SVGA Color Monitor 1024x768, 0.28dp
- 101 Enhanced Waterproof keyboard
- Mini Tower Case w/200W Power Supply

Only \$1219/\$1339

Hi-Q Ultimate MultiMedia Family 425SX System

Ideal for Youngsters and Adults Alike - An Audio/Visual Treat for the Whole Family! Interactive software Makes Learning Fun!

- Intel 486SX-25MHz Processor
- 64K SRAM Cache
- 4MB RAM (70ns) Exp. to 32MB
- 1.2MB and 1.44MB Teac Floppy Drives
- 170MB IDE Conner HDD w/32K Cache
- IDE controller 2H/2F ■ 2 S/1 P/1 Game ports
- Trident OEM SVGA Card, 16-bit, w/1MB RAM
- 14" SVGA Color Monitor 1024x768, 0.28dp
- 101 Enhanced Waterproof keyboard
- AT Desktop Case w/220W Power Supply
- NEC External SCSI CD-ROM w/Pro AudioSpectrum Plus, Two Stereo Speakers & Software: Compton's Encyclopedia, Media Vision's Pocket Recorder/ Pocket Mixer/ Pocket CD, Wing Commander II, & Ultima Underworld.

Only \$1769



AMS 486DX-33MHz Color Pro Notebook

Only \$2859

- 4MB Ram Exp. to 8MB on-board
- 8K Internal Cache
- Built-in 1.44 Floppy Drive
- 8.5", 640x480 Screen w/256 Colors
- 80MB IDE Hard Drive
- 83 Key Keyboard

Standard Features:

- 1 Parallel Port / 2 Serial Ports
- 1 Ext. SVGA / 1 Ext. Keyboard Ports
- 100 Pin Expansion Slots
- Removable NICad Battery Pack
- AC Adapter/Recharger
- DOS 5.0 /Manuals/Free Carrying case
- 1 Year Warranty Service by AMS

AMS 486DX 33MHz Notebook

Only \$2159



- 4MB Ram Exp. to 16MB on-board
- 8K Internal Cache
- 32 Grey-Scale Back-Lit Display
- 120MB IDE Hard Drive (210-340MB Available)
- Built-in 1.44 Floppy Drive
- 83 Keys, 12 Function Keys w/Numeric Keypad

Standard Features:

- 1 Parallel/ 2 Serial Ports
- 1 Ext. SVGA/1 Ext. Keyboard Ports
- 100 Pin Expansion Slot
- Removable NICad Battery Pack
- AC Adapter/Recharger
- DOS 5.0 w/Manuals/FREE Carrying case
- 1 Year Warranty Service by AMS

ATTENTION CUSTOMERS!

Bring in your old PC and we will upgrade your Hard Drive to the latest technology Hard Drive at an incredibly low price!* It doesn't matter where you purchased your system - Bring it in. A new drive will save you time and provide program space - but hurry - this is a limited time offer.

- 120MB Conner IDE HDD w/controller - Upgrade Kit \$235
- 170MB Conner IDE HDD w/controller - Upgrade Kit \$255
- 212MB Conner IDE HDD w/controller - Upgrade Kit \$335
- 340MB Maxtor IDE HDD w/controller - Upgrade Kit \$585
- 520MB Fujitsu IDE HDD w/controller - Upgrade Kit \$855

*Limit One Upgrade per family
(Installation charge \$30 per system)

Ordering Information:

Shipping and handling additional. Corporations rated 3A2 or better and Government accounts are accepted on a 30 net basis. C.O.D. orders over \$500 add \$10.00 special handling charges. Fill returns must have prior authorizations from our Customer Service Department (408) 245-5836. Fill returns must be in original packaging and include all warranty cards and manuals. Incomplete product returns, unauthorized returns and refuse shipments are subject to a 20% re-stocking charge. Fill prices and specifications are subject to change without notice. All trademarks belong to their respective companies. Not responsible for typographical errors.



For Orders Call:

1-800-827-5836

NETWORKING

HiQ has the Problem-Free Solution to your networking wants and needs. With the Ultimate Server/Workstation, and MicroSoft's Workgroup Software, your company will have a reliable and powerful network running in 72 hours. HiQ provides you with expert technicians that have an average of seven years experience...and they will do the job right the first time because Hi-Q has done hundreds of installations.

HiQ, the Specialist for Problem-Free Network Installation.

Since 1987, Hi-Q has set the standard for sales and service in the personal computer market place. With offices from California to Georgia, Hi-Q has the experience and knowledge to help you achieve your personal computing and networking goals. There are many companies that will sell you a computer, but only one that will back you up with technical support, quality equipment and good old-fashioned service. If you're looking for a computer or an entire Local Area Network, Hi-Q wants to help you make the job easy.

Call HiQ Today! **1-800 827-5836**



HiQ Ultimate Server/Workstation 433I System

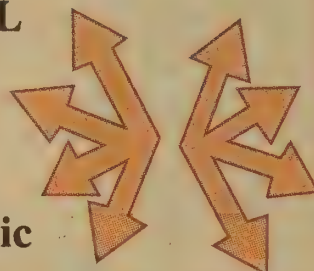
- Intel 433DX-33 Processor
- 4MB RAM (70NS) Expandable to 32MB
- 32MB
- 64K SRAM Cache
- 1.2MB and 1.44MB Teac Floppy Drives
- 170MB IDE Conner HDD w/32K Cache
- IDE controller 2H/2F
- 2 Serial, 1 Parallel and 1 Game ports
- Windows Accelerator SVGA card,
- 16-Bit, 1024x768 w/1MB RAM
- 14" SVGA Color Monitor 1024x768, 0.28dp
- 101 Enhanced keyboard
- AT Desktop Case w/220W Power Supply
- Network Ethernet 16-Bit Interface Card
- FREE HI-Res Mouse/Windows
- 3.1/Workgroup and DOS 5.0 w/manuals

2 Users: \$3449 3 Users: \$5119 5 Users: \$8379

"Stress Free Networking Solution"



NOVELL
IBM
SMC
3Com
SCO
LANtastic



HiQ Ultimate Server/Workstation 425SX System

- Intel 486SX-25 Processor
- 4MB RAM (70NS) Expandable to 32MB
- 1.2MB and 1.44MB Teac Floppy Drives
- 170MB IDE Conner HDD w/32K Cache
- IDE controller 2H/2F
- 2 Serial, 1 Parallel and 1 Game ports
- Windows Accelerator SVGA card,
- 16-Bit, 1024x768 w/1MB RAM
- 14" SVGA Color Monitor 1024x768, 0.28dp
- 101 Enhanced keyboard
- AT Desktop Case w/220W Power Supply
- Network Ethernet 16-Bit Interface Card
- FREE HI-Res Mouse/Windows
- 3.1/Workgroup and DOS 5.0 w/manuals

2 Users: \$3079 3 Users: \$4559 5 Users: \$7459



HiQ Ultimate Server/Workstation 333DX/340DX System

- Intel/AMD 386DX-33/386DX-40MHz Processor
- 4MB RAM (70NS) Expandable to 32MB
- 1.2MB and 1.44MB Teac Floppy Drives
- 170MB IDE Conner HDD w/32K Cache
- IDE controller 2H/2F
- 2 Serial, 1 Parallel and 1 Game ports
- Windows Accelerator SVGA card, 16-Bit, 1024x768 w/1MB RAM
- 14" SVGA Color Monitor 1024x768, 0.28dp
- 101 Enhanced keyboard
- AT Desktop Case w/220W Power Supply
- Network Ethernet 16-Bit Interface Card
- FREE HI-Res Mouse/Windows
- 3.1/Workgroup and DOS 5.0 w/manuals

2 Users: \$2849 3 Users: \$4219 5 Users: \$6899

You've heard the Networking horror stories - systems that crash in the middle of projects, lost data - nightmares of all kinds. These stories, sadly, are true.... is there a solution to network problems?

Why You should buy the HiQ Ultimate Workstation

Pre-Configured Workstations
Just Plug In and Run
Free Network consulting service
On-Site Training Available
30-Day Money Back Guarantee
Warranty: One Year Parts and Two Year Labor
-All Networking systems come w/one year Nationwide On-Site Service (Hardware only)



740 N. Mary Avenue,
Sunnyvale, CA 94086

(408) 245-5836
Fax: (408) 245-3108



YOURS FREE!

You get Norton Anti Virus Software Package (Value \$50.00) with ANY PURCHASE of \$350.00 or more at HiQ...

Limited to one per company.
Not valid with monthly specials.
Please bring coupon with you at the time of purchase - not redeemable for cash.



USER GROUPS

computers in business. Visitors \$5. Call: (415)788-5338. [Exp. #109.]

San Francisco PC Users Group. Meetings: 3rd Tues., 6:15 pm, Conference Center, Bldg. A, Fort Mason. Visitors \$4. Call: (415)979-5879. [Exp. #109.]

South Bay WordPerfect User Group. Meetings: Dates vary, Saratoga Community Library. Free. Call: Martin Van Derpool, (408)238-8434. [Exp. #106.]

Stanford/Palo Alto PC User Group. Meetings: Last Wed., Turing Aud., Stanford. DOS/Windows. Call: (415)329-8252. [Exp. #105.]

KNOWLEDGE-MAN

Bay Area KnowledgeMan (And Guru) User Group. Meetings: 1st Tues., 6:30 pm., JNZ, Inc., 826 Las Trampas Rd., Lafayette. A forum for discussion and info concerning mdb products, esp. KnowledgeMan and Guru. Call: (510)947-4878. [Exp. #107.]

LANTASTIC

LANTastic User Group Of The East Bay. Meetings: 6:00 pm, 2770 Marin Blvd., Berkeley. Call: Loretta, (510)444-1441. [Exp. #109.]

LAPTOPS

HPX HP Laptops & Handhelds. Meetings: 2nd Sat., 10:30 am, Sunnyvale. Call: Michael Felsenstein, (415)564-8279. [Exp. #106.]

LEGAL

SF Bar Assoc. WordPerfect User Group. Meetings: 3rd Wed., noon, Brown bag meetings. SF Bar Assoc. Boardroom, 7th Fl., 685 Market St. Call: (415)421-5650. [Exp. #106.]

MACINTOSH

A32 Macintosh User Group. Meetings: 2nd Sat., 10:00 am, GTE Bldg 3 Cafeteria, 100 Ferguson Dr., Mountain View. Call: (408)263-0398. [Exp. #109.]

BMUG West. Meetings: Last Mon., 6:30 pm, San Francisco Exploratorium. Call: (510)549-BMUG. [Exp. #105.]

BMUG—Berkeley Macintosh User Group. Meetings: Every Thurs., 6:00 pm, Physical Sciences Lecture Hall, UC Berkeley Campus. Call: (510)549-BMUG. [Exp. #105.]

Diablo Valley Macintosh User Group (DVMUG). Meetings: 3rd Tues., 7:00 pm, St. Mark's Lutheran Church, 3051 Putnam Blvd., Pleasant Hill. Meet Mac users, learn about our SIGs. Call: (510)939-2141. [Exp. #109.]

#106.]

International Macintosh User Group (IMUG). Meetings: 3rd Thurs., 6:45 pm, location varies. A forum for multilingual computing. Call: Roger Sherman, (415)859-5146. [Exp. #109.]

Let's Go Macintosh Computer Society. Meetings: 3rd Thurs., 7:00 pm, Skyline Jr. College, Media Center, Rm. 2105, San Bruno. See and try interesting new products, meet other Mac users, hear guest speakers. Call: Fidel Cajulao, (415)221-2995, or Nolan Apostle, (510)947-2523. [Exp. #108.]

Macintosh SIG Of Programming And Interfacing Enthusiasts. Meetings: 2nd Thurs., Lynbrook High School, Rm. 33. Call: George Ingalls, (408)243-0234. Write: PO Box 2185, Santa Clara, CA 95055. [Exp. #105.]

Macintosh SIG. Meetings: 3rd Tues., 7:00 pm, Apple Cafeteria, City Center 4, De Anza and Rodrigues, Cupertino. Sponsored by Software Entrepreneurs' Forum. Call: Jeff Cherniss, (408)999-2524. [Exp. #110.]

MacCruzers. Meetings: 2nd Wed., Santa Cruz. Call: Peter Visel, (408)454-0403. [Exp. #109.]

Macs Of Marin. Meetings: 2nd Thurs., 7:00 pm, Redwood High School, Larkspur. Marin County Mac User Group for all levels of expertise, beginners welcome, SIGs. [Exp. #107.]

PAUG—Peninsula Apple User Group. Meetings: 3rd Thurs., 7:00 pm, Ampex Cafeteria, 411 Broadway, Redwood City. Call: Roger Laker, (415)367-8657. [Exp. #109.]

SPC Apple User Group. Meetings: 2nd Wed., 7:30 pm, Fremont Main Public Library. Call: Dean Fearn, (510)881-9160. [Exp. #109.]

MULTIMEDIA

BMUG Multimedia SIG. Meetings: 2nd Mon., 6:00 pm, Call: (510)549-BMUG. [Exp. #106.]

International Interactive Communications Society—IICS. Meetings: 2nd Tues., 7:00 pm, alternate locations San Francisco and south bay. For people involved or interested in developing and using interactive multimedia technologies. Call: IICS Hotline, (415)328-7318. [Exp. #106.]

North Bay Multimedia Association (NBMA). Meetings: 3rd Thurs., 7:00 pm, alternated locations. Call: Luong Tom, (415)459-0441. AOL:NBMA. [Exp. #109.]

Macromedia User Forum. Meetings: 1st Wed., 600

Townsend, at 7th St., San Francisco. Meet fellow professionals, preview products, get questions answered. Call: John Dowdell, (415)665-3916 (days); Email: jdowdell@aol.com. [Exp. #106.]

Multimedia SIG. Meetings: 1st Thurs., 7:00 pm, Cubberley Community Center, 4000 Middlefield Rd., Palo Alto, Rm. H-1. SIG of Software Entrepreneurs' Forum. Call: Ralph Gilman, (408)746-0551. [Exp. #109.]

Multimedia User Group. Meetings: 1st Wed., 7:00 pm, 600 Townsend St., 1st Fl., San Francisco. A forum to learn about the multimedia industry, get your questions answered, and meet with fellow professionals. Sponsored in part by Proxima and Mitsubishi. [Exp. #106.]

NANOTECHNOLOGY

The Assembler Multitude. Meetings: every other Mon., 7:30 pm, University Lutheran Church, 1611 Stanford Ave., Palo Alto. An open discussion of new technical developments in Nanotechnology and social consequences and dangers of Nanotechnology. Organized by Ted Kaehler. Email: Kaehler2@AppleLink.Apple.com. Address: 20525 Mariani Ave., MS 301-3D, Cupertino, CA 95015. [Exp. #110.]

Nanosystems Study Group. Meetings: Alternate Mondays, 7:30 pm, University Lutheran Church, 1611 Stanford Ave., Palo Alto. The study group will go through Eric Drexler's book, *Nanosystems: Molecular Machinery, Manufacturing, and Computation*. Announcements and mailing list, contact: Ted Kaehler, email: Kaehler2@AppleLink.Apple.com. Phone: (408)974-6241. [Exp. #110.]

NETWORKING

NetSIG. Meetings: 4th Tues., 7:00 pm, Novell Sunnyvale. Networking SIG for Software Developers. SEF group. Call: Skip Addison, (408)277-5867. [Exp. #105.]

NEXT

BANG—Bay Area NeXT Group. Meetings: 3rd Wed., 7:00 pm, Terman Aud., Stanford. Presentations and lectures. Call: (415)327-BANG. Email: info@BANG.org. [Exp. #109.]

Berkeley NeXT Users Group. Meetings: 2nd Tues., 7:00 pm, 2055 Center St., Berkeley. Call: Bernt Wahl, (510)644-0139. [Exp. #105.]

NOVELL

Silicon Valley Novell User Group. Meetings: 3rd Wed., 6:30 pm, Coco's, 1305 S. Mary Ave., Sunnyvale. Call: Bill Strouse, (408)739-9081. BBS: (408)739-8753. [Exp. #106.]

OMNIS 7

GUIdata Bay Area Omnis 7 User Group. Meetings: 1st Mon. Newsletter, forum for all users. Call: Peter Bennett, (510)935-5203. [Exp. #107.]

OS/2

OS/2 Bay Area User Group. Meetings: 4th Mon., 7:00 pm. For anyone interested in OS/2. Presentations, product demos, questions and answers. Call: (415)755-3124. [Exp. #109.]

OS/2 SIG Of San Francisco. Meetings: 2nd Wed., 7:00 pm, location varies. Call: Margery Blum, (415)931-3110. [Exp. #107.]

PEN COMPUTING

Pen Systems SIG. Meetings: 4th Wed., 7:00 pm, Cubberley Community Center, Rm. H-1, 400 Middlefield Rd., Palo Alto. SIG of Software Entrepreneurs' Forum. Addresses all issues of interest for developers of pen computing software. Call: Bill McApine, (415)348-2257 or SEF at (415)854-7219. [Exp. #105.]

PROGRAMMING LANGUAGES

APL Interest Group Of Northern CA. Meetings: 2nd Mon., 7:00 pm, Syntex Labs, 3401 Hillview Ave., Palo Alto. A member SIG of ACM. Call: (408)742-5277. [Exp. #110.]

C/C++ Programmers Network. Write: Rick Rowe, 3245 S. White Rd., Suite 106, San Jose, CA 95148-4056. Email: rown@netcom.com. [Exp. #109.]

Forth Interest Group Of North Bay. Meetings: 2nd Sat., 1:00 pm, 2055 Center St., Berkeley. Call: Leonard Morgenstern, (510)376-5241. [Exp. #109.]

Peninsula/South Bay Visual Basic SIG. Call: Allan Colby, (415)851-4657. [Exp. #110.]

Sacramento Forth Interest Group. Meetings: 4th Wed., 7:00 pm, SMUD, 1708 59th St., Rm. A., Sacramento. Call: Bob Nash, (916)487-2044. [Exp. #109.]

SF Bay Area Visual BASIC User Group. Call: Gustavo Eydelteyn, (510)547-7295. [Exp. #107.]

Silicon Valley Forth Interest Group. Meetings: 4th Sat.,

10:00 am, Applied Biosystems, Inc., Conference Room A/B, 230 Lincoln Centre Dr., Foster City. Call: Art Hampton, (415)873-8554. [Exp. #109.]

PROJECT MANAGEMENT

Microsoft Project User Group. Meetings: 3rd Mon., 6:30 pm, TEK/LINK Corp., 2901 Tasman Dr., Suite 207, Santa Clara. Project management solutions with Microsoft Project software—both PC and Mac. Call: Henry Viveiros, (408)293-5201. [Exp. #105.]

Q&A

East Bay Q&A User Group. Meetings: 4th Tues., 7:00 pm, San Leandro. Developing and expanding the many uses of Q&A database/word processor program by Symantec. Call: Philip Edwards, (510)635-1997. [Exp. #106.]

West Bay Q&A User Group. Meetings: 2nd Tues., 7:00 pm, Redwood City. Developing and expanding the many uses of Q&A database/word processor program by Symantec. Call: Philip Edwards, (510)635-1997. [Exp. #106.]

R:BASE

R:BASE Developers Group. For meetings and membership info, call: (415)956-1200. [Exp. #110.]

SQL

SQL_Forum/Bay Area SQL Database Server User Group. Meetings: Once a month in downtown SF. Oracle, SQL Server, SQLBase, and more. Call: Robert Gentry, DBBS, Inc. (415)583-3000. [Exp. #107.]

TELECOMMUNICATIONS

BMUG Telecom SIG. Meetings: Last Wed., 8:00 pm. How to use your modem, terminal programs, and the BMUG BBS. Call: (510)549-BMUG. [Exp. #105.]

TEXAS INSTRUMENTS

Santa Clara Valley TIPC Group. Meetings: 4th Thurs., 7:00 pm, Magnolia Inn, 176 S. Bernardo, Sunnyvale. Newsletter, library. Call: Ralph, (510)526-2492. [Exp. #106.]

TI-99/4A. Meetings: 2nd Sat., Oakland. Call: Fred, (510)530-8335. [Exp. #109.]

THEOS

Theos User Group. Call:

(510)785-7355. [Exp. #106.]

UNIX/XENIX

N. Cal UNIX Users. UNIX user group now forming: AT&T UNIX, Coherent, SCO UNIX/XENIX, and LINUX. Write: Just Computers, PO Box 355, Cotati, CA 94931. [Exp. #105.]

UNIXSIG. Meetings: 2nd Tues., DEC, 800 W. El Camino Real, Mountain View. Sponsored by Software Entrepreneurs' Forum. Call: Priscilla Rowe, (415)776-0513. [Exp. #106.]

VIDEO TOASTER

Video Toaster User Group. Meetings: Last Thurs., 7:30 pm, HTElectronics, 275 N. Mathilda Ave., Sunnyvale. Special guests, equipment demos, hands-on workshops, plus info/tips on new System 2.0. \$4 for non-members. Call: Andrew Timmins, (408)243-9233 (eve). [Exp. #108.]

VIRTUAL REALITY

Virtual Reality Group. Meetings: varies. VRG is a nonprofit organization dedicated to supporting and promoting the development of VR technologies in the Bay Area. Everyone welcome. Call: Linda Jacobson, (415)286-4716. Email contacts: Linda Jacobson (lindaj@well.sf.ca.us), Peter R o t h m a n (avatarp@well.sf.ca.us), or Timothy Childs (tchilds@well.sf.ca.us). [Exp. #110.]

Virtual Reality SIG. Meetings: San Francisco, East Bay. Call: Mike Conduris, (415)566-8681. [Exp. #110.]

WINDOWS

BMUG Windows Programmers SIG. Meetings: 1st Tues., 6:30 pm, 2055 Center St., Berkeley. The Programmers SIG is a forum for Windows programmers of all levels to meet and exchange information. Call: Ferdinand Rios, (510)526-3031. [Exp. #109.]

WinSIG. Meetings: 1st Wed., 6:30 pm, Cubberley Community Center, Rm. H-1, 4000 Middlefield Rd., Palo Alto. Windows SIG of the Software Entrepreneurs' Forum. Call: Fran Finnegan, (415)288-4400. [Exp. #105.]

munications, scalability, ease of use—which we're looking for. So it looked like a pretty good deal—not perfect, Hobbit can be done better, PenPoint is wonderful and it can be better—but compared to our universe, a very good set of technologies for us.

So we took the risk. You do your analysis and you jump. So that's what we did. I'm very pleased with it, because I think the results are going to be great over time. I think it's really going to be an asset of ours two or three years out.

Rather as was done with the Macintosh, the Personal Communicator ships with bundled applications—but in ROM.

Which is a crazy thing to do, but—

Why is it a crazy thing to do? It seems like kind of a no-brainer, you have to do it—the experience of the Macintosh shows you that you have to bundle the applications to showcase the product.

The marketing side is a no-brainer. You've got to do it because you've got to showcase the technology. There aren't enough applications for the first x months of your life, you've got to give utility out of the box. Something to do when you've bought it.

In our case, we think the Communicators behave somewhat differently from personal computers, in the sense that the users expect it to be pretty complete. It's more like a Sharp Wizard at some level than a PC. They expect it to communicate. It better have email in it—they don't expect to buy that separately. So the basics cannot be options—they become part of the primitives of the system.

The reason I say that's a challenge is technical. Why not put it on a floppy or whatever—because you don't have a floppy always with you. The real way to help the user is to put it in ROM—it can never be lost, cannot be erased, cannot be corrupted, you have nothing to load. It's the perfect thing.

Technically it turns out to be very challenging, because you've got a lot of code to integrate, debug, stabilize, and make work together, and I don't know that anybody ever shipped that much ROM. Any product ever, from any vendor. So we're very proud of it—it turned out to be a good challenge.

How did you decide which products and which vendors to do this with?

That was quite straightforward. We thought—What are the basics? What are the things the customer expects out of the box?

He doesn't expect a spreadsheet out of the box. That's not who those people are. But they expect a calendar. They expect certainly to be able to fax. They certainly expect to be able to keep their to-do list in some form. Those are the basics. So we looked for that, and did a list of what we thought would be the core. We were trying to be critical. We don't want to over-bundle—it's a disincentive to the market and it's not what you want.

So we did that cut, and decided where to get these technologies. This one we can build in-house. This one, there's no way in the time allocated, and it wouldn't even be wise—we'll buy it outside. And so we went and reviewed what was available, worked with all the vendors, who were all GO developers,

and did comparisons and all the things you do for those reviews—look at features and the team, whether you like the people, whether you like the product, whether you believe it's going to be the best. And then you go and essentially get to the point where you've made up your mind, and you work with those vendors.

Some of your bundled applications come from Sitka. Sitka being a subsidiary of Sun, do you envision moving into UNIX at any point?

[laughs] I'll be very straight. I don't see it in the cards. I don't see UNIX in our future. I could be wrong. Looking at what we're trying to achieve for our customers, we don't quite see UNIX being part of that world.



When I go to the computer shops, we talk about discount structures, all the normal things computer people talk about. When I meet with the Bell company, they're in their world; they want to sell the product because they feel it will help their customers communicate, and it will create traffic on their lines."

UNIX might be running on the server, but...

It will be, very often. But we're on the terminal side, not on the server side.

Do you envision at some point having relationships with online services like CompuServe and AOL?

We think that these are very important things for us to do, and we're working on those right now. Because clearly the Communicator could be your perfect window on the information world, the content world. We're looking at both online and store-and-forward services, where you can get delivery of customized news bulletins.

We think that we have the great delivery mechanism for them. The machine has this paper metaphor—how much better can it get, to deliver information in a custom way to the end-user? I actually believe, if you look beyond personal communication, that this will be the next big thing people will do with these machines. For PCs, it was word processing first and then spreadsheets. My bet is that two years out, there's going to be personal communication and content access.

When you talk about content access, are you talking chiefly about text, or also sound and video and so forth?

Today, it's text. That's where the industry is.

We do compressed sound as a primitive of the system. We have no video capability today, but we are looking at that for future products. Today we're really talking about text in an enhanced form. What

we're trying to achieve is to have full use of the visual metaphor—to make text not like a teletype, but like a piece of paper.

What kinds of things are the vertical-market developers doing?

We see so many. A lot of mapping.

GIS?

GIS, but also mapping for salespeople, sales route things. A lot of utilities. We see things with CAD drawings being brought to the field and annotated. We see a lot of graphics, whether it's CAD or mapping-related vertical applications. There's a larger demand for that, and those devices lend themselves very well to it, because of the speed, because of the ability to send and receive those maps in real time.

Even on mapping, there are some horizontal developers who are starting to work on the perfect piece of software for every city in the country, so when you travel, it will have maps and hotels and travel information. It's really a travel guide laid on top of a map.

This is very intriguing to me, because it's a field I'm not so familiar with, and I'm discovering it.

Very few people have heard about it, and all of a sudden we're hearing about it quite a lot.

Exactly, and I'm spending time with those software developers, because, as always is the case, those guys are the precursors, the leading indicators that something will happen.

We had them on the Mac—all these guys tried to do layout things, and we were saying, "What is that, what is that?" "What is 'publishing'? I never heard of it..." So I have this kind of feeling, and I try to spend time with them, to learn more.

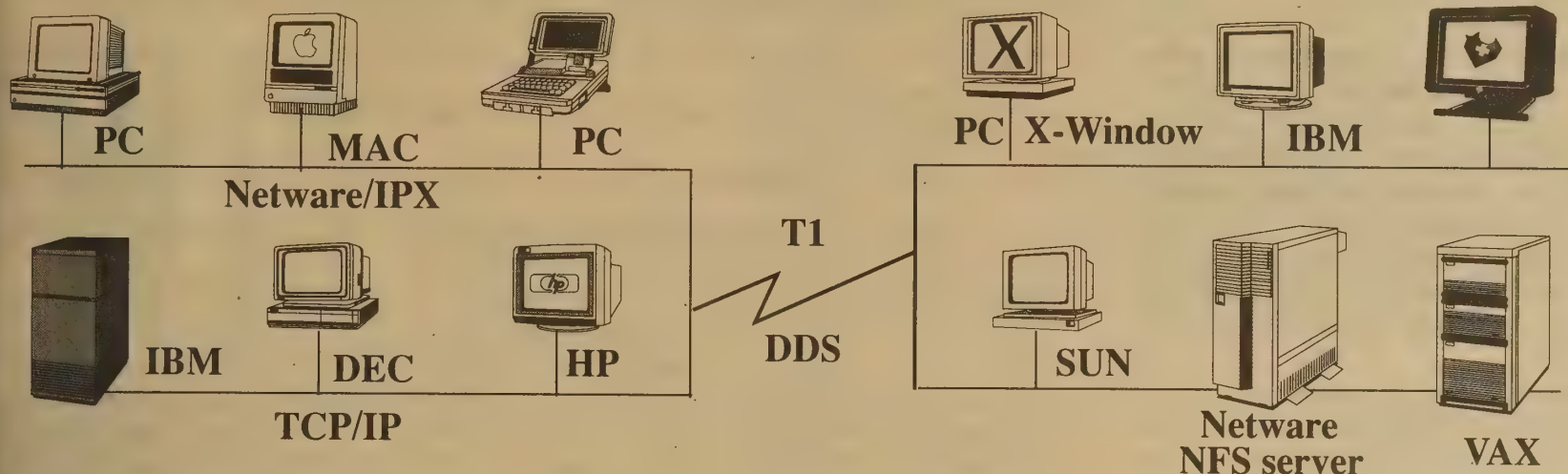
As you'd expect, a lot of sales management tools are being built, client record management, sales calls, these kinds of things. Some mainframe-oriented communications tools—not "How do I send a piece of mail to somebody?", or graphics or sound, but "How do I connect to my mainframe and do an SQL query to it?" It's very practical.

We have a guy who works with developers who'd be even more on top of the development than I am.

Do you call him a software evangelist?

Yeah! Why not? I listen to all the lectures on what has to be done. I always find it retrospectively

NAC Knows NETWORKS!



Novell NetWare

NetWare Special



v3.11, 20 user...\$1950

Netware NFS.... Call
Special Bundle Kits

v3.11, 20 user... \$3350
w/ 10 Ethernet Kits

v3.11, 10 user... \$2295
w/ 5 Ethernet Kits

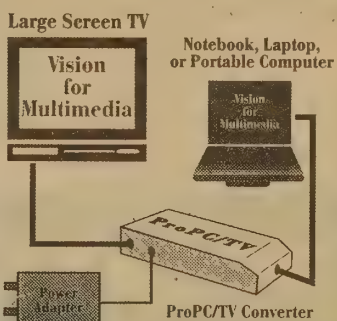
v2.2, 5 user..... \$1349
w/ 5 Ethernet Kits

2-Node NetWare-Lite Kit

Kit: includes NICs,
Cable, and Connectors

...\$290

Blame not your small CRT!
Enjoy your large TV screen!!
Run, play, or present your
programs, games, or data with:
VGA to NTSC encoder box
Special..... \$379



SERVICES

- Network System Design
- App. Software Support
- Hardware Configuration
- System Training
- System Integration
- Telephone Support
- Network Cabling
- On-Site Maintenance
- Software Installation
- Custom Programming

Network Adapters

3Com Coax.....	\$160
3Com 10T.....	\$162
Intel 16 bit Ethernet, Coax.....	\$145
WD 8 bit coax.....	\$148
WD 8 bit 10T.....	\$158
WD 16 bit coax.....	\$175
WD 16 bit 10T.....	\$185
Asante Ethernet.....	\$235
Dayna Etherprint.....	\$415
Intel Netport.....	\$525
LANTastic Arcnet Kit.....	\$290
LANTastic Ether Kit.....	\$390
Xircom Pocket Adapter.....	\$340

TCP/IP - NFS X-Window for PCs

TCP/IP Bundles

TCP/IP- DOS	\$465
TCP/IP-Netware	\$465
TCP/IP-MAC	\$455
TCP/IP-XENIX	\$695
TCP/IP-Unix 386	\$550

NFS Bundles

NFS for DOS	\$495
NFS for Netware	\$585
NFS for Mac	\$725
NFS for Unix 386	\$745

X-Window Bundles

X-window w/TCP/IP...	\$425
X-window w/PC-NFS..	\$960
X-window for Netware	\$950
X-window w/TIGA video card	\$1820
Price includes High Performance Ethernet Card & SW	

Network Equipment

1000' cable	\$200
AMP BNC Male (10 pack)...	\$30
Terminator (thin)	\$6
Terminator (thick)	\$12
Barrel	\$6
15' or 25' assembled cable..	\$20
AMP Crimp Tool	\$225
IBM T.R. Patch Cable 8'....	\$25
Transceiver (10 BaseT)	\$95
Transceiver (BNC).....	\$105
Transceiver (Vampire).....	\$130
Transceiver Cable 5 meter..	\$45
3COM 12-port 10Base T Multiconnect	\$1550
Interlan 8-port Repeater/Thin	\$1795
Asante 12-port Smart Hub.....	\$850
David System 12-port Hub/10T.....	\$585
10 Base T 8 port Hub.....	\$315

SPARC Workstation

- 36 MHz Super SPARCstation
- 10.6 MFLOPS
- 32MB RAM
- 540MB Hard Disk
- GX Frame Buffer
- 3.5" Floppy Drive

- SPARCstation 10
Equivalent
- Multiple Processor
Capability

Priced from
\$14,250

*8M RAM, 200M HD, 20" Color Monitor
*SPARC is a trademark of SPARC International

CHOICES

NOVELL
3Com
SMC
LANtastic
ARTISOFT INC.
EVEREX
intel FTP

Authorized Dealer
WOLLONGONG
ALR
HUMMINGBIRD
DAVID SYSTEM
SCO
THE SANTA CRUZ OPERATION

Business Partner

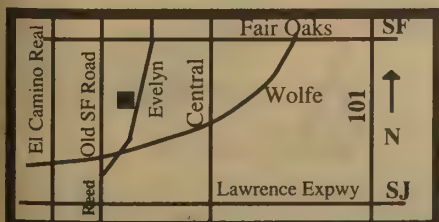
Network Associates Corporation

(408) 733-2600 ext 333

FAX (408) 733-4268

720 E. Evelyn Ave., Sunnyvale, CA 94086-6526

Not responsible for typographic errors. Subject to stock on hand. Prices subject to change



amusing—there's a loop of the same ideas, the same concerns, same challenges.

How are these devices going to be marketed? They're going to be sold at AT&T phone centers—

That's announced, yes.

Do you envision doing direct sales, or selling through consumer outlets?

Probably. We have a plan which will unfold over the next eighteen months which enables new channels over time. There are two reasons: a) we can't tackle every channel at the same time, it's just not going to work; b) not all channels are ready. The consumer channel, which is very interesting for the products we have, is just not ready right now. They will be.

Our strategy is twofold. One is, for the large customers, by all means we'll do direct. Because that's how they want to buy—they want to talk to the people who invented the machine and know how it works. The big secret of distribution strategies is sell where the customer wants to buy. That's it. In the case of the large customer, they want to buy it here, and that's fine.

As the strategy unfolds, we are looking at ways to expand our retail distribution above and beyond the AT&T store, which is a great place for us because it's communications-oriented, and controlled in the sense that they have more money to train their salespeople than most dealers do. And we have a partnership with them—they're an investor here

so they're motivated. It's not any dealer, it's my main investor. So that's a very good thing for us.

We're looking for ways to expand that to some of the traditional computer channels, which are very eager to carry the product. We're working with a lot of cellular phone channels, which are untapped by anybody in our computer world, and which are very eager to carry the product. They see it as a transition product for them, away from the commoditized, cutthroat, sell-a-phone-at-two-dollars-more-or-less world to something that has more software services and other dimensions. They've never been able to sell computers, because they don't know that world, but we're kind of in the middle somewhere.

So we've had a lot of interest from the RBOCs

believe [Newton] missed the boat totally, because doing what they talked about was beautiful technology, missing the fact that the most important need people have who are mobile and want portable devices is communication. I think the vendor position is out of whack; I think it's hard to sell a thousand-dollar super-great organizer.”

[Regional Bell Operating Companies], and from a lot of the traditional cellular phone channels.

It's very interesting, because they come new to the table, they're not the same people I know. When I go to the computer shops I see all the people I work with; we talk about discount structures, all the normal things computer people talk about. When I meet with the Bell company, they're in their world, they want to sell the product because they feel it will help their customers communicate, and it will create traffic on their lines. Many of them are cellular operators themselves; almost all of them are. They see it as the terminal that creates demand.

So, totally different dynamics there. We're working very closely with quite a few of those Bell com-

UPGRADES! UPGRADES! BIOS and SYSTEM UPGRADES!

Don't throw away your investment!
Upgrade your computer with
help from PSC Computer Products

PSC Computer Products carries a full line of the most up-to-date products to upgrade your personal and office computers including:

- Award BIOS
- MR BIOS
- 486, 386, 286 EISA and ISA Motherboards
- Laptop Computers
- IDE Drives
- Monitors
- Low Cost Service
- POST Cards
- AMI BIOS
- Phoenix BIOS
- 486, 386, 286 EISA and ISA Systems
- Memory
- Floppy Drives
- Keyboards
- Diagnostics
- and More

Call PSC Computer Products today!
Visa, MasterCard, American Express
Corporate, Education, and Government Orders

PSC COMPUTER PRODUCTS

275 Saratoga Avenue, Suite 200
Santa Clara, CA 95050
Sales: (800) 437-6324
Fax: (408) 249-5129
Tech Support: (408) 249-7400

Become A Software Success!

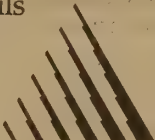
Software Entrepreneurs' Forum (SEF), a non-profit professional association, has been helping software entrepreneurs succeed since 1983.

Our members are successful developers who share:

- Technical information and tips
- Ideas that work to market a software product
- Experiences and contacts to build a team or raise money

SEF's monthly **dinner meetings** feature well-known speakers who share the experience and information you need to make it in today's competitive software market. SEF also sponsors 10 monthly *special interest groups* that focus on specific markets and technologies, providing invaluable learning and networking opportunities.

Become a part of SEF's excitement! Call 415-854-7219 today for membership details and a FREE copy of SEF's newsletter.

 **Software
Entrepreneurs'
Forum**

AT WIT, WE GUARANTEE YOU HIGH QUALITY, RELIABILITY, PROVEN SERVICE!

WIT

Having been in the PC business for over 8 years, we at WIT know just what it takes to GUARANTEE our customers SUPER DEALS. By guaranteeing you the HIGHEST QUALITY & RELIABILITY in our systems with proven service, we feel assured that our customers are getting the BEST DEAL. So call WIT today and find out how you can also get the BEST DEAL.



**NEW
ARRIVAL**
LOCAL BUS MOTHERBOARD
VESA STANDARD
32 BIT SUPER VGA
32 BIT IDE I/O

EISA 486-50 MHz \$1650

EISA 486-33 MHz \$1500

- ✦ 4 MB RAM w/256K Cache
- ✦ 120 MB IDE Hard Drive
- ✦ 1.2 & 1.4 MB Floppy Drive
- ✦ IDE 2FD/2HD Controller
- ✦ 2 Serial, 1 Parallel, 1 Game Port
- ✦ 101K Enhanced Keyboard
- ✦ Mini-Tower Case + Power Supply
- ✦ 14" SVGA Monitor .39 + VGA Card
- ✦ Clock/Calendar with Battery Back-up
- ✦ Built-In Math Co-Processor Socket
- ✦ 72 Hours Burn-In
- ✦ CPU FAN Lowers Temp. 50%

OPTIONS:

- 200 MB Hard Drive Add \$100
- 340 MB Hard Drive Add \$450
- SVGA .28 w/1 MB Card Add \$60
- SVGA NI .28 w/1 MB Card Add \$100

ISA 486-50/486-33..... \$1440/1250

ISA 486DXII-66/DXII-33.. \$1490/1300

- ✦ 4 MB RAM w/256K Cache
- ✦ 120 MB IDE Hard Drive
- ✦ 1.2 & 1.4 MB Floppy Drive
- ✦ IDE 2FD/2HD Controller
- ✦ 2 Serial, 1 Parallel, 1 Game Port
- ✦ 101K Enhanced Keyboard
- ✦ Mini-Tower Case + Power Supply
- ✦ 14" SVGA Monitor .39 + VGA Card
- ✦ Clock/Calendar with Battery Back-up
- ✦ Built-In Math Co-Processor
- ✦ 72 Hours Burn-In
- ✦ CPU FAN Lowers Temp. 50%

OPTIONS:

- Local Bus w/32 Bit-53 SVGA ...Add \$230
- Diamond SpeedStar 24X ...Add \$100
- Diamond Stealth Add \$175
- Orchid Fahrenheit Add \$165

486SX-33 MHz..... \$1050

486SX-25 MHz..... \$1020

- ✦ 4 MB RAM w/256K Cache
- ✦ 120 MB IDE Hard Drive
- ✦ 1.2 & 1.4 MB Floppy Drive
- ✦ IDE 2FD/2HD Controller
- ✦ 2 Serial, 1 Parallel, 1 Game Port
- ✦ 101K Enhanced Keyboard
- ✦ Mini-Tower Case + Power Supply
- ✦ 14" SVGA Monitor .39 + VGA Card
- ✦ Clock/Calendar with Battery Back-up
- ✦ 72 Hours Burn-In

OPTIONS:

- 256K Cache.....Add \$25
- RAM/per MB Add \$35
- Upgrade Mid-Tower Add \$25
- Upgrade Full-Tower.....Add \$45

NOTEBOOK

- 386-25SL- VGA-Mono \$1400
- VGA-Color \$2200
- 486-25 SLC VGA-Mono \$1450
- VGA-Color \$2300

Upgrade:

- 80 MB Hard Drive Add \$70
- 120 MB Hard Drive \$190
- Fax/Modem \$170
- Memory per MB \$50

NOTEBOOK SYSTEMS INCLUDE:

- ✦ 386-SL25 Processor w/64K Cache or 486/SLC Processor
- ✦ 2 MB RAM
- ✦ 60 MB Hard Drive
- ✦ Internal 1.44 MB 3.5" Drive
- ✦ Color VGA Liquid Crystal Display (LCD) 640x480 Resolution, 9" Diag.
- ✦ Or Paper White VGA 10" Liquid Crystal Display 640x480 Resolution, 64 Shades Of Gray on Monochrome
- ✦ LeaderBook
- ✦ External VGA Monitor Port
- ✦ Connector for Docking Station
- ✦ 1 Parallel/1 Serial Ports
- ✦ Dual NiCAD Batteries and Power Adapter
- ✦ Advanced Power Management Features
- ✦ Full-Size Keyboard, Inverted "T" Cursor Layout, 12-Function Keys
- ✦ External Port for Keyboard
- ✦ Built-In 2-Button Trackball
- ✦ MS-DOS 5.0
- ✦ 8.5"x11"x1.73". Only 5.7 lbs
- ✦ Carrying Case

386-40 MHz \$940

386-33 MHz \$930

- ✦ 4 MB RAM w/128K Cache
- ✦ 120 MB IDE Hard Drive
- ✦ 1.2 & 1.4 MB Floppy Drive
- ✦ IDE 2FD/2HD Controller
- ✦ 2 Serial, 1 Parallel, 1 Game Port
- ✦ 101K Enhanced Keyboard
- ✦ Mini-Tower Case + Power Supply
- ✦ 14" SVGA Monitor .39 + VGA Card
- ✦ Clock/Calendar with Battery Back-up
- ✦ Built-In Math Co-Processor Socket
- ✦ 72 Hours Burn-In

OPTIONS:

- 100 MB Hard Drive Less \$30
- 80 MB Hard Drive Less \$50
- 40 MB Hard Drive Less \$100

386SX-33 MHz..... \$760

386SX-25 MHz..... \$740

- ✦ 2 MB RAM
- ✦ 40 MB IDE Hard Drive
- ✦ 1.2 & 1.4 MB Floppy Drive
- ✦ IDE 2FD/2HD Controller
- ✦ 2 Serial, 1 Parallel, 1 Game Port
- ✦ 101K Enhanced Keyboard
- ✦ Mini-Tower Case + Power Supply
- ✦ 14" SVGA Monitor .39 + VGA Card
- ✦ Clock/Calendar with Battery Back-up
- ✦ Built-In Math Co-Processor Socket
- ✦ 72 Hours Burn-In

OPTIONS:

- 2nd Floppy Drive Add \$55
- 14" Amber Monitor + MGP...Less \$140

COMMITMENT TO SERVE YOU:

- ✦ 30 Day Money Back Guarantee
- ✦ NO Restocking Fee
- ✦ 1 Year Warranty on Parts & Labor
- ✦ Prompt Shipment
- ✦ Customizable Systems
- ✦ Government PO's Welcome

ALL AROUND SATISFACTION:

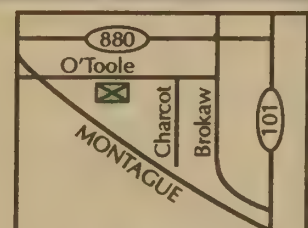
Stanford University, UC Berkeley,
United Postal Service, AT&T,
General Electric, IBM, Lockheed,
Conner, Quantum

408-433-0188

Fax: (408) 433-0318 • Tech Support: (408) 433-0709

WANG INTERNATIONAL TRADE, INC.

2073 O'TOOLE AVE. • SAN JOSE, CA 95131



Hours:
Mon-Fri 8-5:30 pm
Saturday 10-3

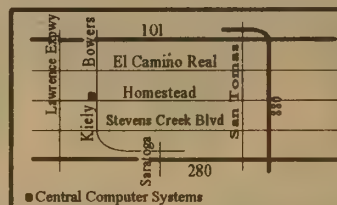
• Shipping and handling additional • 30-day money-back guarantee only for products that are incompatible with your software • Shipping costs non-refundable • Refunds not available after 30 days • All returns must be in original packages with user's manual and copy of invoice • All prices are subject to change without notice.

WIT

CENTRAL
COMPUTER SYSTEMS, INC.
WIDE SELECTIONS AT LOW PRICES

Since 1986
(408) 241-0185
FAX: (408) 241-0390

820 Kiely Blvd.
(Between Homestead and Kaiser)
Santa Clara, CA 95051
Open 7 Days
Mon - Fri: 9 AM - 7:30 PM
Sat - Sun: 10:30 AM - 6 PM
30 Monitors On Display



- No surcharge for Visa, Discover & MasterCard
- Govt., universities and qualified firms purchase orders accepted on approved credit
- Financing plan available OAC
- Reseller & quantity pricing available
- Prices are subject to change without notice and to stock on hand
- Not responsible for typographical errors
- Call for items not listed

I BASIC SYSTEMS

IBM PS/ValuePoint

with: Desktop Case, 1.44MB FD,
IDE Controller, Keyboard, Mouse,
SVGA (1024x768, 1MB), I/O ports

486-DX2-66, 8MB, 212MB HD	2469
486-DX-33, 8MB, 212MB HD	1825
8MB, 120MB HD	1620
486-SX-25, 8MB, 170MB HD	1450
8MB, 80MB HD	1230
386-SLC-25, 2MB, 80MB HD	950

II HARDWARE

1 CD ROM

ATI Stereo FX w. speaker	115
CD Caddy / Sony CD Caddy	9.50/12
Gallant Sound Card / Labtec Speakers	95/25
Turtle Beach 16 bit MultiSound	515

AZTECH Labs Sound Galaxy NX Pro
(8 bit card+speaker+7 bundled s/w) . . . 159

MEDIA VISION

Fusion CD-16	495
Multimedia Upgrade Kit (w. Spectrum 16)	925
Pro Audio Spectrum 16	189
Midi Mate / w. Passport Design Trax	55/95

NEC

CDR-74 CD ROM 280ms, 300Kb/s, ext	599
CDR-84 CD ROM 280ms, 300Kb/s, int.	545
Interface kit for PC	89
Multimedia Upgrade Kit int. / ext.	915/995

SONY

CDU 541-01 380ms int (w / controller)	425(515)
CDU 7211 380ms ext (w / controller)	555(635)

Sound Blaster Pro CD-ROM Upgrade Kit

w. 4 CD titles (no Sound Blaster Pro), int.	365
Multimedia Kit w. 6 CD titles, int/ext.	525/559
Sound Blaster / Sound Blaster Pro Basic	95/155
Sound Blaster Pro w. Midi kit	179
Sound Blaster Pro 16	279
Creative Lab Video Blaster / MIDI Kit	345/59

TECEL

DM-3024 265ms int. / w. Kit	425/495
DM-5024 265ms ext. / w. Kit	495/565

TOSHIBA

3401 200ms int.	495
-----------------	-----

TRANSTAR

Mini SCSI Plus (Parallel to SCSI Adapter)	159
Music Box v.2 / T130 Interface Kit	29/79

CD SOFTWARE

About COWS / Atlas Pack (World & US)	27/35
Amazing Universe / Atlas U.S. President	55/35
American Business Phone Book / Aloha!	62/39
Barney Bear goes to School	29
Battle Chess Multimedia	49
Beauty & the Beast / Bible Library (OEM)	39/59
Birds of America / Britannica Family Choice	45/72
Business Backgrounds	39
CD Source Book of American History	95
Chess Master 3000 / CD Power (shareware)	49/39
Compton's Family Encyclopedia	49/195
Compton's Interactive Encyclopedia (Win.)	255
Conan-the CIMMESIAN / Cautious Condor	39/45
DARWIN / Dr.T's Composer Quest	79/59
Educational Gameland (K-6 grade)	37
Electronic Home Library/Elec. Library of Art	52/69
Essential Home & Business Collection	49
Grammy Awards / Golden Immortal	45/45
Great Cities / Great Wonders - of the World	52/59
Greatest Books Collection / Guy Spy	45/42
Great Literature (2000 books)	79
Grolier's New Multimedia Encyclopedia	95/225
Hound of the Baskervilles	42
Jones in the Fast Lane/Just Grandma & Me	39/45
JAZZ of Multimedia History	79
Illustrated v2.0 / Multimedia v5.0 Encyclopedia	50
King Quest V / Loom / Mamals	39/39/39
Languages of the World	35
MacMillan Dictionary for Children (K-12 grade)	45
Mavis Beacon Teaches Typing	49
Microsoft CINEMANIA	59
Microsoft Multimedia Beethoven 9th symphony	59
Microsoft Multimedia Bookshelf	39/129
Microsoft Musical Instruments	59
Mixed-up Mother Goose	39/49
Monkey Island	39/49
Movie Directory Database software Potpourri	59
Multimedia Animals Encyclopedia	65
Murder Makes Stranger Dead Fellows	49
Pacific Islands	45
PC SIG Library vol.11 / PC SIG Games	109/37
Phoenix Shareware v2.0 / v3.0 (new)	45/62
Playing w. Language (Eng/Fren/Ger/Jap/Span)	57

ORCHID (CAD STATION)



Super Board

VLB 486-33, 256K cache	
4 MB, TEAC 1.2 FD	
Maxtor 130 MB HD, IDE Controller, 2S 1P	
Mid Tower Case w/ 220W	
Mitsumi 101 Keyboard	
Power II 4A monitor 1024x768, .28, NI	
Fahrenheit VLB 1MB VGA	
MS Serial Mouse	
MS DOS 5.0 & Windows 3.1	2150

Pro Phone / Publish It (desktop publisher)	125/55
Prescription Drugs / Q & A v4.0	65/59
Reference Library / Sante (for Good Health)	45/62
Secret Weapons of the Luftwaffe	39
Shareware Database / Star Child	59/42
Shakespeare / I / II	42/49
Sleeping Beauty / Peter & the Wolf	39
Stellar 7 / Space Quest IV (Roger Wilgo)	39/49
Street Atlas (DeLORME)	115
The Adventure of Willy Beamish	38
The Family Doctor / The USA Factbook	59/39
The World of US Manga	45
Time Table of History / The Animals	45/45
Ultima 1-6 / Ultimate Shareware	45/55
US History / US Presidents	55/45
Voyage to the Planets / White Horse Child	55/42
Where in the World is Carmen Sandiego	65
Wing Commander w. Secret Mission 1&2	45/55
Wing Commander w. Ultima 6	45
World Vista / World Atlas	59/19.50

2 CASES

AT Case W/200W Power	\$98
Baby AT w/ 200W Power	79
Baby Tower w/ 200W Power	85
Mid Tower w/ 220W Power	105
Full Tower with 250W Power	139
Full Tower w.300W Power: Black / White	215/199
Slim Case w/ 200W (2 drive bay)	95
WorkStation Case w/ 60W (1 drive bay)	95
Hard Disk Drive External Casing	
2 half ht or 1 full ht for PC, 60W, 11lbs	119
3 half ht or 1 full & 1 Half ht for PC, 60W, 13lbs	139
1 half ht for SCSI for Mac, 40W	99
2 half ht or 1 full ht for SCSI for Mac, 60W	139

3 CONTROLLERS

4 Floppies w/ IDE controller for AT	\$45
COREL SCSI software	75
1:1 MFM Controller 2HD & 2FD	59

ACCULOGIC

sIDE-2 (2 IDE hard drive only)	26
sIDE-3 (2 FD & 2 IDE HD)	29
sIDE-4 (2 FD & 2 IDE HD, 2S & 1P)	49

ADAPTEC

1522K SCSI w/ kit (3MB/s)	159
1542B SCSI w/ kit (10MB/s)	259
1542B Plus w/ ASW 310 & ASW 410	329
1640 SCSI w/ kit for MCA	335
1742A SCSI EISA w/ kit (2F & 2H)	459
ASW-1410 ASPI MS-DOS Manager v3.0	69
ASW-EZ SCSI for DOS & Windows	69
ASW-310 Sy-Tos Plus (Tape Backup software)	99
ASW-410 CD-ROM driver v2.1	69

ALWAY TECHNOLOGY

IN 2000 High Performance 16 Bit SCSI	179
AMI SCSI EISA Cache	519
NCL America (w/ on board BIOS)	
538B IDE controller 2HD & 2FD for AT	45

DTC

2290 IDE EISA controller	139
3280AS SCSI controller	105
3290AS EISA SCSI host adapter	479
6282 1:1 ESDI	125
7287 1:1 RLL	73

FUTURE DOMAIN SCSI Controller

TMC 1660 for AT (H only) controller only	139
TMC 1660 DNK for AT (H only) w/ kit	229
TMC 1680 for AT (4F&H, 15MB/s) controller	169
TMC 1680 DNK for AT (4F & H) w/ kit	259

KOUWELL

Floppy controller (XT)	18
4 Floppies controller (XT,AT)	33
IDE controller	27
IDE controller w/ AT I/O (2S 1P 1G)	34

MICROSOLUTIONS

CompatiCard IV 4-Floppies Controller (2 ext)	
360K/720K/1.2MB/1.44MB/2.88MB FD	115

MYLEX

DCE 376 EISA SCSI w.4MB cache	725
-------------------------------	-----

ORCHID

VESA LBus IDE cont. (2HD,2FD)	69
-------------------------------	----

MICRONICS COMPUTERS INC.

1 MB, TEAC 1.2 FD
IDE Controller, 2S 1P
Baby AT Case w/ 200W
Mitsumi 101 Keyboard
MS Serial Mouse
MS DOS 5.0 & Windows 3.1

486-50 EISA 256K cache	1715
486-50 ISA 256K cache	1455
486-33 EISA 256K cache	1465
486-33 ISA 256K cache	1125
386-33 Gemini 64K cache	795
386SX-20 Gemini	615

PROMISE Drive Cache Controller

DC 99M IDE 512K build in, upgrade 8MB	145
DC100M IDE I/O 512K build in, upgrade 8MB	179
DC 2031 IDE I/O cache up to 16MB	145
DC 2032 IDE I/O cache up to 16MB	169
DC 430 VL IDE VLB cache up to 16MB	259
DC 620 IDE EISA cache up to 16MB	295
SC 100 SCSI EISA cache up to 16MB	425

ULTRASTOR

ULT 12F/24 ESDI 32K cache	165
ULT 12C/1 ESDI 1MB cache	455
ULT 22CA ESDI EISA 64K cache	495
ULT 15C IDE cache	199
ULT 14F SCSI 32K cache ISA	229
ULT 24F SCSI EISA 64K cache	419
ULT 34F VL Bus SCSI-2 32K cache	295

4 DIGITIZERS

SummaSketch II Plus 12x12, 4 button & pen	269
SummaSketch III Plus 12x12, 4 or 16 button	299
SummaSketch III Plus 12x18, 4 or 16 button	549
Unitech KD-4000 12x12, 4 button, 4 templates	179

5 DRIVES

Frame for 3.5" Hard Drive and Floppy Drive	\$6
Removable Hard Drive Case for 3.5" HD	49

HARD DRIVES

CONNER	
CP-3000 40MB 25ms IDE 3.5", 1" ht	139
CP-30104 120MB 19ms IDE 3.5", 1" ht	239
CP30174E 170MB 18ms IDE 3.5", 1" ht	265
CP-30204 200MB 12ms IDE 256K 1" ht	345
CP-30254 250MB 14ms IDE 256K 1" ht	399
CP-3544 544MB 12ms IDE 1" ht	875

FUJITSU (5 years warranty by manufacturer)

M2624FA 525 MB 12ms SCSI-1&2	909
2266FA 1.2GB 15ms SCSI 5.25" full	1299
M2652S 2.0GB 11ms SCSI 5.25" full	2475

MAXTOR

MXT-7120A 130MB 15ms IDE 3.5"	239
MXT-7213A 213MB 15ms IDE 3.5", 1" ht	345
LXT 340A 340MB 13ms IDE 3.5"	585
LXT 535A 535 MB 13ms IDE 3.5"	899
LXT 7120S 130MB 15ms SCSI	279
LXT 7213S 200MB 15ms SCSI 3.5"	365
LXT 340S 340MB 13ms SCSI	589
LXT 535S 535 MB 13ms SCSI	925
PO-12 1.2GB 13ms SCSI	1325
PI-17S 1.7GB 13ms SCSI	1575

Optical Drives: Rewritable 1 GB SCSI, 35ms

External Tahiti II	2795
1 GB Cartridge Glass	199

MICRO SOLUTIONS (External Hard Drive)

40MB / 100MB (use printer port)	345/455
---------------------------------	---------

PLUS DEVELOPMENT (Hard Card)

Hardcard II XL 50 50MB, 9ms	249
Hardcard II XL 105 105MB, 9ms	399

QUANTUM

EIS 127 AT 127MB 17ms IDE 32K cache	265
EIS 170 AT 170MB 17ms IDE	295
LPS-240AT 244MB 16ms IDE 256K cache	419
LPS-240S 244MB 16ms SCSI 256K cache	499
PRO-425S 425MB 14ms SCSI 64K cache	895
PRO-1225S 1.2GB 9ms SCSI 1.2M cache	1545
SEAGATE ST-351A 40MB 28ms IDE	139

SYSGEN (External Hard Drive, use printer port)

42 MB / 84MB / 124MB	309/395/489
----------------------	-------------

TEAC SD 3105 105MB 19ms IDE 1"ht

	209
--	-----

FLOPPY DRIVES

SYQUEST SQ44i 44MB internal	289
SQ44e 44MB external w/ controll & cartridge	499
SQ400 44MB / SQ800 88MB cartridge	75/99

SYSGEN (External Floppy Drive)

Portable EasyFloppy 3.5"/5.25" for laptop & PC	
1.2, 1.44, 360K, 720K (printer port)	159
Floptical Drive 21MB w/ controller	299

TEAC (Floppy Drive)

1.2MB 5.25" / 1.44MB 3.5" w. frame	57/55
2.8MB 3.5" w/ frame	95
Dual Floppy Drive 1.2MB & 1.44MB	149

NICE

(MADE IN U.S.A.)

1 MB, TEAC 1.2 MB FD
IDE Controller, 2S 1P
Baby AT Case w/ 200W
Mitsumi 101 Keyboard
MS DOS 5.0 & Windows 3.1
MS Serial Mouse

486-50 EISA 256K cache	14
486-50 ISA 256K cache	12
486-33 ISA 256K cache	10

6 I/O CARDS

EVEREX

Magic AT I/O Plus (w/16550UART) (1S 1P)	
Second serial port for AT I/O cards	

KOUWELL

2S 1P 1G w/ NS16550AFN chipset (XT, AT)	
4 Serial ports card / AT I/O (2S 2P)	79
AT I/O (2S 1P) / AT I/O (2S 1P 1G)	27
AT I/O w. IDE (2S 1P 1G)	
Printer Card / Serial Card (XT, AT)	15

QUICKPATH

13 port I/O w/4-16550UARTS (2 IDE, 4F, 4S, 2P, 1G)	
--	--

STB 4-COM, 4 serial, 16 bit, w/16554, support	
COM 1-8, IRQ 2,3,4,5,10,11,12,15	

7 KEYBOARDS

FOCUS

FK2001	101 click	.....
FK 8000	111 w.calculator	.....
FK5001	130 keys w. cursor accelerator	.....
FK9000	129 keys Programmable	.....

11 MODEMS & FAX

AP TF-333 Phone & Fax Auto Switching	89
ditional Semi. TyIN 2000 Answer/Fax/Modem	195
itech Micro Systems (dos & win)	
omm-panion Pocket Fax Modem 96/24	129
ata Fax 9624Vi, MNP5,v.42bis.	99
martConnect 9624i Fax Modem	75
Tech	
ullet Modem 9696 v.32,v.42bis int./ext.	295/325
omate Pocket Fax Modem (with Win/DOS s/w)	
P1496MX / P9696MX	319/295
VEREX	
vercom 9600 v.32,v.42,v.42bis,MNP5 Int	295
vercom 2400 Baud External w. MNP5	139
ECOM	
ax 96 w/ 1 Liner & Far Fetch Fax	135
ax 96 & modem for DOS	119
ax 96 w/ 1L&FFF & modem for DOS	169
YES	
ptima 96 v.32,v.42,v.42bis, MNP 5, Ext.	369
ptima 96 Ext. + Fax 96	395
ptima 144 Ext. + Fax 144	495
ocket edition 2400 w/ Smartcom EZ	129
mart Modem 2400 Ext.	275
tra 96 v.32,v.32,v.42,v.42bis,MNP5 Ext.	579
tra 144 v.32,v.32,v.32bis,v.42,v.42bis, Ext.	655
series SmartModem 9600 v.42,v.42bis,Ext.	499
mart Com Exec/Win./Smart Com III	75/109/119
TEL	
4400 EX v.32,v.32bis,v.42,v.42bis, Ext	470
axability Plus/OCR for Windows trade-up	115
atisFaxtion Modem w. FAXability s/w:	
100 int. send96 rec.48, 2400 modem	95
200 internal 96/24 v.42,v.42bis,MNP5	295
300 int. 96/144 v.42 (no scan port)	315
400 int.96/144 v.32,v.32bis,v.42,v.42bis	395
400e external, 4K data buffer	465
ACRONIX	
axLite 96/PC pocket fax modem v.32,v.42,	
v.42bis, MNP5, w/ WinFax software	315
axLite 144/PC pocket fax modem v.32bis, v.42,	
v.42bis, MNP5, w/ WinFax software	365
PRACTICAL PERIPHERALS	
V14400FX96 v.32bis, int.	369
V14400FX96SA v.32bis, ext.	409
ROBOTICS	
burier 144 v.32,v.32bis,v.42,v.42bis,MNP5, Int.	535
burier 144 v.32,v.32bis,v.42,v.42bis,MNP5, Ext.	555
burier HST-DS 144	
v.32,v.32bis,v.42,v.42bis,MNP5, Ext.	775
ortster 2400 w. Sierra Game int/ext.	99/109
ortster 96 Modem MNP5 Int/Ext	259/279
ortster 9696 FAX MNP5, Int/Ext	289/309
ortster 14.4 v.32bis, v.42bis, Int/Ext.	299/319
ortster 96/14.4 FAX MNP5, Int/Ext	309/329
ared Access Modem Sharing Kit	675
TRIX	
00 baud modem w/ MNP5, Int.	49
/24 send & receive fax/modem w. MNP5, Int	75
/24 fax/modem MNP5 v.42, Int	105
/4 fax /14.4 modem v.32bis, int.	239
cket send & receive fax/modem, Ext.	139
OM	
96 Rec. 48 modem 2400 Int / Ext	85/99
9624V (int./FX9624V (ext.)	135/155
/96 fax modem v.32, v.42bis, Int / Ext	245/265
/4/144 fax modem Int / Ext	279/309
12 MONITORS	
VGA mono paper white 640 x 480	135
Mono paper white	115
ANDARD TECHNOLOGIES	
0-M VGA 1024x768 Paper White	115
C	
1412 14" Mono paper white	95
1428 14" 1024x768 .28	279
1430 14" 1024x768 .28 NI (110V/220V)	315
1439 14" 1024x768 .39	235
PS/ValuePoint	
12 14" 1024x768 .28, NI	339
14 14" 1024, 28, NI, Digital Pro. Control	515
19 15" FST, 1024x768 .28, NI	639
G (Auto Switch Power Supply)	
V1448 14" 1024x768 .28, NI	355
14S 14" 1280x1024 .26, Sony Trinitron	525
15F 15" flat, 1280x1024 .26, NI	585
17F 17" flat, 1280x1024 .26, NI	1075
A to Mac Adapter	25
SUBISHI (w/ base)	
9555SETK 20", 1280x1024 .31, NI	1745
S 6705 17" 1280x1024 .26, NI, Trinitron	1095
C Cable	39
NAO	
30i 16", 1280x1024 .28 NI	955
60i 17", 1280x1024 .25, NI	1725
50i 17", 1280x1024 .28, NI	1145
50i 20", 1280x1024 .31, NI, Trinitron	2595
50i 21" 1280x1024 .31 NI	2195
CX	
G 15", 1024x768 .28	649
G 15" Flat, 1024x768 .28, NI	749
G 17" Flat, 1280x1024 .28, NI	1345
G 21" Flat, 1280x1024 .28	2395
C Monitor Lens (Anti-reflection, Anti-static)	
for 4FG / 5FG / 6FG	74/115/185

PANASONIC

C1381i 14" Super VGA, 1024x768 .28, Int.	325
C1395 14" 1024x768 .28, NI	435
C1991 20" 1024x768 .31, NI	1485

POWER II

3E 14" Super VGA, 1024x768 .28, Int	285
4A 14" Multisync, 1024x768 .28, NI	319

SAMSUNG

MA2565 12" mono amber	75
MZ4571 14" mono paperwhite	115
ML4571 14" VGA mono 640x480	125
CVM4967 14" 1024x768 .28	305
CSD5577 15" Flat, 1024x768 .28, NI	459/499
CSF7487 17", 1280x1024 .26, NI	995

SEIKO

CM1450 14", 1024x768 .25, NI	425
CM2050 20", 1024x768 .31, NI	1545

SONY

1304S 14", 1024x768 .25, NI	565
1604S 17", 1024x768 .25, NI	995
1936 20", 1280x1024 .30 NI	2095

VIEWSONIC

ViewSonic 4e 14", 1024x768 .28, Int	315
ViewSonic 5+ 14", 1024x768 .25, NI	515
ViewSonic 5e 14", 1024x768 .28, NI	415
ViewSonic 6e 14", 1024x768 .28, NI	355
ViewSonic 6FS 15", 1024x768 .28, NI	575
ViewSonic 7 17", 1280x1024 .28, NI	995
ViewSonic 8 20", 1280x1024 .31, NI	1595

13 MOTHERBOARDS

386-33/386-40 (w/ 64K cache w/o CPU)	125/129
upgrade tp 256K cache	50
486-33 w/ 64K w/o CPU	135

AMI

Mark V 386-33 w/ 64K/256K cache	395/465
Super Voyager 486-33 64K/256K	725/795
Super Voyager 486-50 64K/256K	975/1045
Enterprise II 486-33/50 EISA w/ 128K	995/1295
AMI Diag	95

GENOA

Express 486-50 w/256K for Local Bus (w/o CPU)	
Color Bahn Multimedia VGA & Turbo	475

MICRONIX

386SX-20 Phoenix BIOS (32MB max)	175
386SX-25	235
386-33 64K cache Gemini (32MB max)	355
486-33 256K cache ISA	685
486-33 256K cache EISA E2	1025
486-50 256K cache ISA	1035
486-50 256K cache EISA	1295
486-33 Local Bus w/256K cache	899
486-DX2-50 Local Bus w/256K cache	1065
486-DX2-66 Local Bus w/256K cache	1245
4MB Piggy Back (up to 8MB)	299
16MB Memory Card	150
upgrade to 256K cache for old 486-33	80

NICE

486-33 256K cache (w/o CPU)	245
486-33 256K ISA VLB (w/o CPU)	255
486-50 256K cache (w/o CPU)	295
486-50 256K Mini EISA VLB (w/o CPU)	365
486-50 256K cache EISA (w/o CPU)	475
486-DX50 VLB 256K cache EISA (w/o CPU)	525

ORCHID

Superboard 486/VLB	
(VESA Local Bus for VGA & controller)	
DX-33 / DX2-66, 256K cache (w/o CPU)	375
DX-50 256K cache (w/o CPU)	395

QUICK-PATH

486-50 w/64K cache, 15ns ISA (w/o CPU)	345
486-50 w/256K cache, 15ns EISA (w/o CPU)	545
upgrade to 256K cache for 486-50 ISA	80
UMC 286-12	69

14 MOUSE

JOYSTICK: Warrior 5	14.50
---------------------	-------

AERO

IMPC-60 3 button / IMPC-40 trackball	18/29
--------------------------------------	-------

APPOINT (specials)

MousePen Pro for PC / Portable / Mac	49
Thumbelina for PC / Portable / Mac	49

GENIUS GM-F302 mouse (3 button)

IMSI PC Stylus (Mouse & Trackball for CAD)	39
--	----

KENSINGTON Expert mouse serial trackball

LOGITECH

Cordless Mouse	89
Dexxa Serial Mouse / First Mouse Serial	27/37
Fotoman Digital Camera for PC & PS/2	485
Mouseman Bus	64
Mouseman Serial PS/2 combo	65
Mouseman Serial PS/2 combo/ 5 pack	57/275
Scanman 32 with OCR software	185
Scanman 256 (with OCR software)	249/299
Scanman color - 16.8 million colors	565
Trackman Portable / Trackman Combo	99/79

MICROSOFT

Ball Point Mouse (portable)	119
Bus Mouse 400PPI	85
Serial Mouse 400PPI	65
Serial Mouse 400PPI w. PS/2 port	85
Serial Mouse 400PPI w. 9 to 25 pin adapter	85

MOUSE SYSTEMS

Omni Mouse (2 button)	25
PC Mouse III Serial (optical) / Mouse Pad	69/22
PC Trackball II	55
Serial Bus Card (9 IRcs)	30
The White Mouse w. Power Panel	56

15 NETWORK

MAILMAN 2.0 (10 user for Novell NetWare)	350
SilverNet (high performance Peer-to-Peer)	79

3COM

3C503 8 bit coax / 3C503-TP ethernet	179/199
3C503-16 coax / 3C503-16-TP Etherlink II	169/179
3C507 16 bit coax ethernet / 5 packs	279/1250
3C507-TP 16 bit TP ethernet / 5 packs	299/1450
3C509 Etherlink III coax / 5 pack	139/625
3C509 Etherlink III TP / 5 pack	145/650
3C523B Etherlink/MC for PS/2 / 5 packs	289/1210
3C523B-TP TP for PS/2 / 5 packs	319/1435
3C621 Link Builder 10 BT (12 port)	745
3C623 single port BNC Module	125

ARTISOFT (Lantastic)

AE-2 Ethernet starter kit, 10Mbps v4.1	459
AE-2 Ethernet Window starter kit	510
AE-2 Ethernet adapter	199
AE-2 MCA Ethernet adapter	275
AE-2 EtherBasket (12 cards for price of 10)	1990
AE-3 Ethernet starter kit, 10Mbps v4.1	535
AE-3 Ethernet starter kit v4.1, Windows	585
AE-3 Ethernet adapter	235
10BaseT starter kit v4.1	595
2Mbps starter kit v4.1	355
2Mbps adapter	145
AE-1/T 8bit 10Base-T adapter	135
AE-2/T 16bit 10Base-T adapter	210
64K RAM upgrade for AE-2, AE-3 adapter	45

AI software (individual node) v4.1	69
Articom (LAN modem sharing software)	269
Artiscribe System	call
Central Station Connectivity Processor	399
Dial up Connection	69
Ethernet Software Kit (NOS) v4.1	79
Lantastic Z (2 stations) v4.1	89
Lantastic for Network (Network O/S)	139
Lantastic for Windows (software)	165
Lantastic for Macintosh Software kit	339
Lantastic for Macintosh Hardware & s/w kit	549
Lantastic Print Server Station Ware	69
Network Print Server Station Ware	69
Network Eye (Remote Control Access)	129
Peer-Hub 10Base-T concentrator	270
Peer-Hub AI interface kit	270
Remote Boot ROM for AE-2, AE-3 adapter	45
Sounding Board adapter kit	72

CASTELLE

FaxPress (Network Fax Server)	
Novell 1 line ethernet coax	2595
Novell 2 lines Token Ring 16/4Mbps	3225
JetPress (Network Print Server)	
for HP II, IID, III, IIID, coax / TP	429
LANPress (Print Server) connects up to 4 printers	
Ethernet Thick/Thin coax (1P 3S)	475
Ethernet Thick/Thin coax (2P 2S)	625
Ethernet 10BaseT (1P 3S)	475
Ethernet 10BaseT (2S 2P)	635

CC:MAIL

cc:Mail DOS v4.0 / Windows platform	199/339
cc:Mail 10 user pack / 25 user pack	239/579
cc:Mail Gateway v3.21 / FAX v1.2	879/1350

COMPLAN

Ethernet	
8 bit E100 coax (special)	85
8 bit ET500 TP ethernet	109
16 bit E200 coax	105
16 bit E210 coax & TP, BUS master	159
16 bit E300 coax dual-port shared memory	129
16 bit ET600 TP ethernet	125
16 bit E650 coax & TP, Surface Mount	149
16 bit E200/2 coax for PS/2 MCA	145
16 bit E800/2 coax for PS/2 MCA	155
32 bit E911 Bus Master for EISA	315
32 bit E950 coax & TP, EISA Bus	259
Boot Prom (for E100/ E200/ E300/ E600)	25
Hub 8 port TP +1BNC +1 cascading	319
12 port TP +1BNC+1 AUI +1 cascading	520
Pocket adapter for coax / TP ethernet	185

Archnet

16 bit for XT/AT Star Topology	69
16 bit for XT/AT Bus / TP	79/79
16 bit "4-in-1" Turbo Star & Bus	
(w/NCR 90C98A ASIC)	99
4-port Archnet Passive Hub	19
8-port Coax Stackable Active Hub	159
Pocket adapter for Archnet	135
Token ring	
T1000 16/4Mbps	349
T1000/2 16/4 Mbps for MCA	379
MAU 8-port Type 1 cable, DB9 shielded TP	329
MAU 8-port Type 3 cable, RJ45 unshielded TP	279

FARALLON

PN380 PhoneNet card PC for LocalTalk	199
PN381 PhoneNet w. Timbuku for Windows	259

GATEWAY COMMUNICATION

G/Ethernet 16 coax / 16 TP	129/149
G/Ethernet 32 bits	480

SMC (WESTERN DIGITAL)

Ethercard Plus Elite 8 bit coax	115
Ethernet Plus Elite 16 coax / 16 TP	139/145
SMC 3016 16bit coax / 16bit TP	145/149
Ethercard Elite 16 combo (coax/10BaseT)	175
Ethercard Plus/A for PS/2 (16 bit MC)	219
Ethernet Elite 32 bit coax / 32 bit TP	650/660
Network Boot ROM for Ethernet	34
Concentrator 8 Port (10 Base T Ethernet)	339

INTEL

EtherExpress 16 coax / 16 TP	135/145
EtherExpress 16 coax 5-pack	545
EtherExpress 16 MCA / 16 MCA TP	179/189
EtherExpress 32 EISA	559
EtherExpress ISA Hub Adapter 12 port	565
EtherExpress EISA Hub Adapter	645
LAN Protect 1.5 (virus protection)	685
LAN Sight 3.0 Network Utility / Monitor	299
LANSpool software 386 NLM v3.5	425
NetPort II Thin/Thick Ethernet	519
NetPort II 10BaseT / Token Ring	529/579
NetSatisfaction V.2 (software for NOVELL)	955
RJ45 Harmonica	55
TokenExpress 16/4 for ISA / EISA	535/685
TokenExpress 16/4 for MCA	535

HP (HEWLETT PACKARD LaserJet w/ toner)
Desk Jet 500 / 500C 395/519
Jet Ram Memory 256K for 500 & 500C... 69
Desk Jet 550C 719
Laser Jet HP IIP+ 775
Laser Jet HP4 / Laser Jet HP4M 1395/1975
Laser Jet HP IIP / IIPD / IIPSi 965/2295/3395

Accessories:

Envelope Tray (15 envelopes) for IIP 69
Envelope Tray for IIP, IIPD 79
Envelope Feeder for IIPD (special) 245
Legal Tray for HP II, IIP, IIPD 69
Lower Cassette (w/ letter tray) IIP, IIPD 149
Toner for HP II, IIP 79
Toner for HP IIP, IIP+, IIPD 66
Jet Ram Memory for HP II 135/205
2MB / 4MB 75/115/155/195
Jet Ram Memory for HP IIP, IIP+, IIPD, IIPD 75/115/155/195

PACIFIC DATA PRODUCTS

ProTracer inkjet printer/plotter, A- to C-size output, 360dpi, 1960RISC processor, 512K, 45dBA 1125
5 MB / 8 MB memory upgrade 439/669
postscript emulation card 375
HP-GL Emulation Card 325
sheet feeder I / II 115/105
ink cartridges 19.50

PANASONIC

1180i / 1123 158/199
1124i / 1624 285/349
Auto sheet feeder for 1124 only KX-P36 120
2123 24 pin, 43.5dBA, color capability 239
2124i 24 pin, 43.5dBA, color capability 319
2180 9 pin, 45dBA, color capability 159
2624 (24 pin, quiet printer 46.5 dBA) 375
Color upgrade kit KX-PCK11 49
Single bin cut sheet feeder KX-PT10 95
32K Buffer dot matrix printers KX-P43 65
Serial interface card PS-13 75
4410 Laser, 512K 5ppm 625
1MB mother Ram board KX-P444 115
1MB daughter Ram board KX-P445 99
LaserBoard 1MB (3rd party) 105
Corona KX-PCR3 45
Developer KX-PDP4 105
Drum KX-PDM4 89
Extra Cassette KX-PKC2 45
Fuser Unit KX-PFS5 105
Optional Second Cassette KX-P495 135
Toner KX-P453 35
Fonts Card KX-P47x (for Laser Printers) 95
4430 Laser, 1 MB, 5ppm 885
Accessories same as 4410
4420 Accessories
RamBoard 1MB / 2MB / 4MB 99/139/219
Developer KX-PDP2 95
Drum KX-PDM2 99
Envelope Tray KX-P431 59
Legal Tray KX-P425 45
Ozone Filter KX-PFT2 26
Toner KX-P451 39
4450 Accessories
RamBoard 1MB 139
others same as 4450i
4450i Laser, 11ppm 1095
RamBoard 1MB / 2MB / 4MB 99/139/219
Developer KX-PDP1 95
Drum KX-PDM1 145
Envelope Tray KX-P430 59
Legal Tray KX-P420 45
Ozone Filter KX-PFT1 29
Toner KX-P450 35
4455 (Postscript) 11ppm 1695
RamBoard 2MB 159
others same as 4450i
QMS (Adobe Postscript)
QMS-PS 410 4ppm, 2MB, 45 Fonts 1375
1MB / 2MB / 4MB Memory 125/165/245
Envelope / Legal / Letter Tray 69/69/69
Lower Cassette with Letter Tray 160
Toner 95
SEIKO
Smart Label Printer Plus (IBM/APPLE) 149
Box of Label (2 rolls per box) 10.95
TEXAS INSTRUMENTS
MicroLaser Plus PS17 / PS35 9ppm 1155/1295
Apple Talk Kit 99
Ram Board 1MB 69

LASER PRINTER ACC.

COMPUTER PERIPHERAL

Jet Page (for HP II) 195
GENESIS
JetTray 250E, holds 250 #10 envelopes 469
IQ ENGINEERING
Super Type Master Library 99
Super Cart. 2 for HP II, IIP, IIP+, IIPD, IIPD 249
Super Cartridge 2 & 2LC 269
Super Cart. 3 Pro+ for HP IIP, IIPD, IIPD, IIPSi 249
Super Cart. 3 Creative Collection for IIP family 249
Desk Jet 500 / Desk Jet Plus Professional 99

PACIFIC DATA

25 in One! (for Deskjet 500) 99
25 in One! IIP 245
(for HP II, IIP, IIP+, IIP, Microtek) 245
Complete Font Library for HP IIP, IIPD, IIPD 255
Font Bank (NEW) (for all HP Laserjet) 205/269
stores soft fonts, 0.75MB / 1.5MB 205/269
Headlines Cartridge for HP II, IIP 185

Pacific Connect XI
(connect up to 10 PC and/or Mac to a printer)
For HP II, IIP, IIP+, IIPD 319/389
5 port 256K / 1MB 449/519
10 port 256K / 1MB 449/519
For HP 4, IIPSi, Paint Jet XL300 449/649
7 port 1MB / 4MB 519/719
10 port 1MB / 4MB 519/719
Pacific Page & 2MB (Postscript for HP II) 389
Pacific Page II / XL (postscript for HP II) 719
Pacific Page P.E. (for HP IIP, IIP+, IIPD, IIPD) 279
Pacific Page P.E. & 2MB 405
Pacific Talk 179
Pacific Page PE XL (for HP IIP, IIP+, IIPD, IIPD) 719
Postscript w. 2MB & accelerator board 719
Plotter in a Cartridge (for HP II) 225
Plotter in a Cartridge P.E. 225
for HP IIP, IIP, IIP+, IIPD, IIPD 225
1-2-4 Plus (for HP II, IIP) 115/155/235
1MB / 2MB / 4MB 89/129/209
Pacific 4 Memory (for HP IIP, IIP+, IIPD, IIPD) 179/329
1MB/2MB/4MB 129/179/249
LP Memory (for IBM 4029E) 209/299
2MB / 4MB 209/299
PELICAN All type ribbons visit us

18 SCANNER

TAMARACK AntiScan Flatbed Scanner 24 bitcolor
256 gray levels, comes with Picture Publisher LE 3.0 and Recognita plus OCR or PhotoStyler
Full 1.1 only, SCSI interface 1145
TTI 6000C 600dpi 1445
TTI 8000C 800dpi 595
Slide Scan Kit (transparency, slide, X-ray) 1295
MICROTEK
Scan Maker 600Z w. PhotoStyler 1295
Hand scanners see Logitech in section #14
E-TECH
4256G 256 gray scale (w/OCR) 149/169
4200C 256/4096 color (w/OCR) 295/319

19 TAPE BACKUP

COLORADO
DJ-10 (120MB) QIC-40 w/ cable \$189
DJ-20 (250MB) QIC-80 w/ cable 255
AB-11 External tape port 45
Cable (2 Floppies & tape back up) 9
FC-10 Controller 95
KE-09 Ext kit w/o controller 75
TC-15 controller w/ data compression 195
Unix/Xenix driver for DJ-10, 20 99
Trakker 250MB ext. (printer port) 415
Trakker 120MB ext. (printer port) 355
EVEREX
EV-811 8 bit adapter QIC-02 for XT, AT 99
EV-880 floppy tape adapter for AT 59
HILITE (Archive s/w included)
California 250MB, 3.5", 1"ht 195
IOMEGA tape 250MB insides, 3.5", 1"ht 265
MICRO SOLUTIONS (External)
120MB / 250MB External (printer port) 329/389
SUMMIT
SE120 120MB w/ Central Point Back up 189
SE250 250MB w/ Central Point Back up 255
SE305 305MB Backup 325
Accelerator board for SE120 & SE250 165
SYSGEN 250 MB External (printer port) 369
CASSETTES 3M, VERBATIM call

20 VGA CARDS

Creative Lab Video Blaster 345
Haupauge WinTV-02 (122 channel tuner) 465
A/V Source Adapter Cable 52
Prolab Video Master 185
SIIG Multimedia Video Grabber Plus 339
All cards 1024x768 except as stated
CGA / MGP card (Monographic w. Printer) \$29
ET4000 Tseng Lab 1MB 99
ET4000 VLB, 1MB 165
Oak067 Super VGA 512K 52
Oak077 Super VGA 1MB 69
AMI
FastView EISA VGA Graphics w/ 1MB 295
ATI
VGA Stereo 512K w. speakers 239
Wonder Lab 24 w. mouse, 1MB, Hi-color 159
Graphic Ultra 1MB (VRAM) w. Mouse 280
Graphics Ultra Plus 2 (DRAM) 349
Graphics Ultra Plus 2 (DRAM) w. Mouse 379
Graphics Ultra Pro 2MB (VRAM) for ISA 465
Graphics Ultra Pro 2MB (VRAM) for VLB 475
Graphics Vantage 1MB (DRAM) w. Mouse 235
DIAMOND
SpeedStar 24X w. 1MB 16 million colors 179
Stealth 1MB, VRAM, w. Sierra Hi-color 225
Stealth 24, 1MB, 16 million colors (DRAM) 189
Stealth 24 VLB, 1MB (DRAM) 189
Stealth Pro (VRAM) 1MB/ Pro 2MB 289/399
GENOA
7900 1MB, 16 million color, 24 bit 129
UNITED SOLUTIONS
Ultra 1MB 1280x1024 Hi-color 139

MYLEX
GLE911 EISA, 1280x1024, 1MB 399
GXE020B 1280x1024, 4MB DRAM 1039
2MB VRAM, TMS34020, Tiga/EISA 1039
NUMBER NINE (T134020)
#9 GXe 1280 x 1024, 90Hz, S3-928 chip
Level 10 / L11 / L12 399/559/699
GXI Lite L20 TIGA, Win, 1280-16color 565
GXI Lite L21 CAD, Win, 1280-16color 725
GXI TC-Level 29, 24 bit 1280x1024-65K colors
at 72Hz, 4MB vram 1MB dram 1699

ORCHID

Fahrenheit VA/ VLB, w. voice annotation, 24 bit 225
Fahrenheit VLB, VESA 1MB 24bit 175
Fahrenheit 1280-D 1MB with Hi-color 225
Fahrenheit 1280 w/ Accelerator 24 bit 215
Fahrenheit 1280 (DRAM) 1MB 169
ProDesigner IIs 1MB with Hi-color 139
ProDesigner IIs, 1MB, Hi-color for MCA 335

III SOFTWARE

ADOBE (special)
Illustrator 4.0 Win/ upgrade competitive 359/185
Streamline for Windows 125
Plus Pack for Mac / Windows 99
Type Cartridge 1 / Type Cartridge 2 79
Type Align / Type Manager for Windows 2.0 59/67
Type Set 1/2/3 for Windows 65/65/109
Type Set: Overheads & Slides 75
Type Set: Spreadsheets & Graphs 75

AUTODESK

AutoSketch 3.0 / for windows 149/179
Generic CADD 6.0 285
Graphic Impact / Instant Artist 95/49
Home Series (Home/Landscape/Kitchen/Deck) 45
Multimedia Explorer 115

BORLAND

Brief 3.1 for DOS & OS/2 99
C++ Professional 3.1 for Windows 319
C++ 3.1 for Win & Application Frameworks 485
dBase IV v1.5 for PC 439
ObjectVision 2.1 / ObjectVision Pro 2.1 102/335
Paradox 4.0 / upgrade 489/185
Quattro Pro WINDOWS 115
Quattro Pro upgrade for Win 99
Quattro Pro 3.0 (special) 30
Quattro Pro 4.0 (special) 105
Screenery (Windows wallpaper, screen saver) 25
The World of C++ (Video Training Kit) 85
Turbo C++ for DOS / Windows 69/105
Turbo Debugger & Tools 2.0 99
Turbo Pascal 7.0 / for windows 1.5 115/109

LOTUS

1-2-3 for Windows 325
1-2-3 Rel 3.1+ for DOS / Rel 3.4 single 385
Ami Pro for Windows 229
Competitive upgrade 109
Lotus Organizer (special) 99
Smart Suite (123 win, Ami, Freelance, ccMail) 450

MICROSOFT

C/C++ 7.0 w. SDK (Upgrade) 315/135
DOS 3.3 / 4.01 59/19
DOS 5.0 55/65
ACCESS (special) 99
Entertainment Pack for Windows 1 / 2 / 3 / 4 28
Excel 4.0 for Windows / Comp. Upgrade 299/125
Flight Simulator 39
FORTRAN v5.1 279
Fox Pro 2.5 single DOS / Windows 315
Fox Pro 2.0 6-pack 555
Mail Remote Workstation 125
Money for Windows 2.0 (special) 49/19
Multimedia Development Kit (w. CD Rom) 299
Office for Win (Excel, Word, Power Point, Mail) 469
PC Mail Server for DOS & Windows (10 user) 435
Power Point for Windows / upgrade 299/97
Project 3.0 for Windows / upgrade 419/145
Publisher for Windows 125
Quick Basic Compiler 4.5 65
Quick C for DOS / Windows 69/125
Quick C Compiler w. Quick Assembler 125
Software Development Kit (SDK) 305
Sound System for Win. (w. 16 bit Audio card) 199
Sound Bits (Cartoons/Hollywood/Musical) 32
Test for Windows 249
True Type Font Pack 1/ Pack 2 (for HP printers) 49
Video for Windows (CD & floppy) 135
Visual Basic for Windows 2.0 (new) 125
Pro Tool Kit for Visual Basic v1.0 135
Visual Basic Professional Version (windows) 315
upgrade Visual Basic 2.0 prof. 99
Windows 3.1 / upgrade 65/49
Windows 3.1 Device Driver Development Kit 315
Windows for Workgroups (software+ Win 3.1) 165
Workgroups Add on (to win 3.1) 69
Windows for Workgroups add on Starter Kit 385
Workgroups Add on 1 user kit 195
Word v5.5 (DOS) / for Windows v2.0 207/299
Word for Windows upgrade to v2.0 125
Works 3.0 (new) / for Windows 99/125
Works Competitive upgrade (Win.) 79

SANTA CRUZ OPERATIONS (SCO)

SCO C++ 915
SCO ODT Dev. System v2.0 / tape 1475/1250
SCO ODT Personal System 2.0 / tape 1170/1086
SCO XENIX-NET 386 single server v1.3.0 675
UNIX 386 Dev Sys 3.2.4 C-Compiler & Dev Tools 899
UNIX 386 GT Oper Sys 3.2.4 Multiuser 899

XENIX 386 Dev Sys 2.3.1 C-Compiler & Dev Tools
XENIX 386 GT Oper Sys 2.3.4 Multiuser
SYMANTEC
Norton Anti-Virus 2.1 (new)
Backup 1.2
Desktop 2.0 for Windows/ DOS 10
Utilities 6.01
Commander
PC Anywhere 4.5 Remote and Host
Q & A
Time Line v5.0 / Lan Pack / for Win 445/379
WORDPERFECT
DataPerfect / DrawPerfect
Figure Library (Bus/Edu/Fig/Holiday/Leisure)
LetterPerfect 1.1 / PlanPerfect 95
WordPerfect 5.1 DOS
upgrade for Dos 5.1
WordPerfect 5.2 for Windows
upgrade to Windows 5.2 from DOS
upgrade kit for Windows 5.1 to 5.2
competitive trade up to Win. 5.2
WP Executive/ Office 3.1/ Works 145/91
WordPerfect Presentations (w. Sound Blaster)
OTHERS
3-D Charts to go
ACT 1.2 / 2 user / for Windows 225/335
After Dark for Windows (screen saver)
Aldus Freehand 3.1 for Windows
PageMaker 4.0 for Windows
Persuasion 2.1 for Windows
Photostyler 1.1 for Windows
Asymetrix Multimedia Make Your Point
Automap (road atlas) / for Windows 4
CALERA Wordscan 1.1/ plus 182
Carbon Copy 6.1 Guest & Host / for Win 119
Central Point Backup 7.1 oem
Anti-virus DOS / for Win & DOS 1
PC Tools 8 (new) w. Anti Virus & Backup
Check-It
Clipper 5.01
Cooking Companion (Food Analyze)
Corel Draw 3.0 / upgrade 365
Competitive upgrade
Da VINCE eMail 2.0, 10 user
Direct Access 5.1 / for Windows (new) 5
Display Faces / Family Bible 7
DR DOS 6.0 + NetwareLite 1.1
Energizer Bunny (screen saver)
FaceLift for WordPerfect / for MS Window
Fastback Plus 3.1 (special) / for Win 89
Fax Grabber w. Norton Desktop for Win
Fax Grabber 1.2
Faxit DOS & Windows
Fax Pack (WinFax Pro, Grabber, Desktop)
File Maker Pro 2.0 for Windows
Frame Maker 3.0 / competitive upgrade 485
Full Motion Video MATINEE (screen saver)
Geoworks Pro
Grammatik V for DOS / Windows
Hardvard Graphics for Win (oem) 375
Hardvard Graphics 3.0 for DOS (oem) 399
Hijaak 2.1 / for Win. / Hijaak PS 135/135
Hollywood for Window (special)
HP Dash Board for Windows
IBM OS/2 2.0 / Upgrade 13
LapLink Pro v4 / upgrade 9
MicroGraf Designer 3.1
MicroGraf Windows Draw 3.0
More Fonts / MacPrint 7
My Product Invoice
PFS: First Choice (w/ Prodigy start-up kit)
Pacioli 2000 (special) 1
Procomm Plus 2.1 / for windows 6
Professional Draw / upgrade competitive 269
QA Plus 4.7 / for Windows 5.1
Quark X Press 3.1 for Window
Quarterdeck
DesqView 286 / DesqView 386 v2.4 69
DesqView / X
DesqView / X Network Manager (TCP/IP)
Qemm 386 v6.0 / Manifest / Qram 62/3
Quicken for DOS 6.0 / Mac/ Windows 45/4
QuickBook / QuickPay (payroll) 8
QuickBook & QuickPay
Right Writer 5.0 / for Windows
Speedstor 6.5 / SpinRite II 6
Stacker AT-16 2.0
Stacker Data Compression 3.0 / upgrade 5
Star Trek (screen saver)
Super PC-Kwik
Superstor Pro 2X / Superstor 2X 7
The Far Side (computer calendar, special)
Time Slip v5.0
Turbo CAD v3.0 (design & drafting)
Turbo Tax 1040 headstart DOS/ Win
Untouchable & Disklock (special)
Ventura Publisher 4.1 Windows (new)
Ventura Publisher 3.0 + upgrade 4.0
Ventura Publisher 4.1 Education special
Vista Pro
Wave for Window
Wine Trakker / Micro Cookbook
Winfax Pro 3.0 (new)
Wired for Sound Pro
XEROX Rooms for Windows
XTree Gold 2.5 / XTree for win. (special)
Educational Software & Games ... on

anies. This could be a very big thing in terms of distribution and sales.

he cellular modem is an add-on. What percentage of your customers do you think will go for that option?

We're trying to predict right now. The truth is, it's very hard to predict.

I'll tell you why. Customers are just starting to think about it. They don't know themselves. They've never thought about it before. The guys we approach, they say, "Oh, you mean I could attach a modem to the EO? We need to think about it, it's not in our plan." You see their eyes lighting up—"Oh, yeah, so you mean if a guy forgot something he could get it from our server, from the parking lot of his customer?" "Oh, you mean he could have the names of all the customers and be calling them at the same time, and take notes at the same time? That's very good."

But there's no maturity to the idea. They're just being exposed to it now. So they can't even tell me, "We're going to buy that." Many of them say, "We've got to go study it."

So it's so early right now that I just can't tell you. We have had very positive response, but a surprised response. They say, "You mean you have that now? We thought it would be a few years from now that you could do that." They're not ready. "You mean the guy can fax something from his car..."

Our goal is about 30% for the cellular modems. It's really too early for me to give you data; I'm giv-

ing you an opinion, what our goal is, and the response we're getting from our customers, which is excited and surprised.

Conceptually, how would you differentiate your product from what is known of Newton?

That's hard. The first pass of Newton that we saw had very little emphasis on communications. It seems that has changed recently, but the first thing we saw was an emphasis on personal assistants, a neat idea. So, a different center of gravity.

To simplify, it was more the super-advanced Sharp Wizard than the super-advanced phone. So we were going after different targets, and that's the big difference. I'm going to do everything I can to make your communications life better. We have a lot more to do. It was a telling thing, I thought, that modems were not even on the list of Newton's features the first time I saw it.

Now can Newton come back and incorporate communications? I'm sure they can. I believe they missed the boat, by the way, totally, because doing what they talked about was beautiful technology, missing the fact that the most important need people have who are mobile and want portable devices is communication. I think the vendor position is out of whack; I think it's hard to sell a thousand-dollar super-great organizer.

I'd like to talk again when it's there, because I'd be in a better position to really see. It seems like they've shifted as they've gone along—they're smart, and I'm sure they'll adapt to the reality of the world.

How long do you think it will take for this to be a broadly accepted technology instead of a niche?

Two or three years.

How quickly do you expect prices to fall?

I think we're going to drop, at equal functionality, 20% a year or something. There will be cheaper products with less functionality, there's a difference.

I don't expect it to fall faster than the rest of the industry, and PC prices have stopped falling so rapidly. The curve is flattening. Part of the curve was not really any physics law or technology law; it was really a matter of eating channel margin and reducing operating expenses. In that sense, we start clean, because we have lower operating expenses from day one, and pretty lean and mean channels. So there is nothing to eat there. We now have history, so we know what to do, right? We're not going to go and build an expensive channel.

Mid- to long-term, do you expect to be building different-size devices?

Not long-term, mid-term. It is our declared strategy to build multiple-sized devices, with the same user experience, the same software, same user interface, same feel, so you can really buy the small, the medium, or the big. We think that's one of the strengths we can bring to the market, a product line that shares the same software and the same user experience. And we're doing that very actively. ■

LAN TRAINING AT TECH MART

IN THE HEART OF SILICON VALLEY

WEEKEND CLASSES

NOVELL NETWARE 3.11

SYS/MGR & ADV. SYS/MGR

CLASSES WITH A CAT III NOVELL C.N.I.

DISCOUNT AVAILABLE IF BOOKED BEFORE 2/15/93

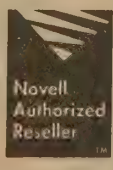
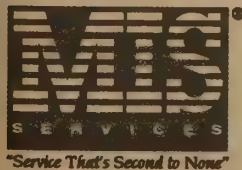
NETWARE SYSTEM ADMINISTRATION:

1 30-1 31, 2 20-2 21, 3 13-3 14, 4 3-4 4, 4 24-4 25

ADVANCED NETWARE SYSTEM ADMINISTRATION:

2 6-2 7, 2 27-2 28, 3 20-3 21, 4 10-4 11, 5 1-5 2

1 (800) 300 - 4MIS



SUPERTEL PRESENTS ATI GRAPHICS ULTRA PRO MACH 32 ACCELERATOR SERIES

PROFESSIONAL GRAPHICS FOR
THE UNCOMPROMISING USER!

Features:

- Mach32 Graphics Accelerator
- 76Hz Flicker-Free Display
- Multimedia Acceleration
- 2.0 MB Video Memory
- Enhanced Windows Operation
- Non-Interlaced 1280x1024 Resolution
- Accelerated 65,000 Color Graphics plus True-Color

\$449

OTHER ATI VIDEO CARDS

VGA WONDER XL24 w/1 MB AND MOUSE	\$140
GRAPHICS ULTRA PRO w/2 MB VRAM*	\$449
GRAPHICS ULTRA PLUS w/2 MB DRAM*	\$315
8514 ULTRA AT w/1 MB DRAM	\$240
VGA STEREO F/X w/1 MB DRAM, MOUSE, MIDI BOX.	\$230
STEREO F/X	\$109

*OEM Package **Plus Shipping

SUPERTEL

PO BOX 483, CUPERTINO, CA 95015-0483

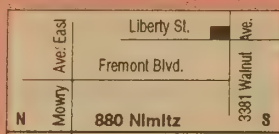
(800) 995-9739

(408) 973-9739

Fax: (408) 725-0872

RESELLER, OEM & VOLUME BUYERS INQUIRIES WELCOME

Fremont
3381 Walnut Ave.



M-F 9-6 pm • Sat. 11-5

Computerland of Fremont/Stockton

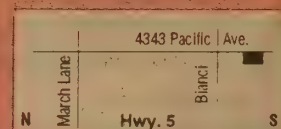
(510) 794-9311

Cash prices only

(209) 473-1241

Bring ad to get these prices

Stockton
4343 Pacific Ave.

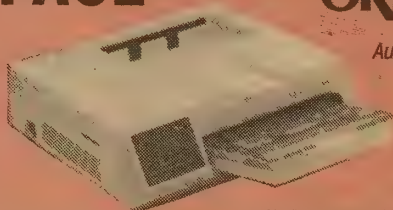


M-F 9-6 pm • Sat. 11-5
Not responsible for typographical errors

WE WON'T BE UNDERSOLD!

OL400 LED PACE PRINTER

- Industry's best warranty:
5 years on printhead
1 year parts/labor on printer
- PC Magazine Editors' Choice
- JUNE 12, 1990
- 4ppm 300dpi, crisp blacks, publication
quality output
- More standard typefaces/fonts than
HP LaserJet™
- High-capacity 200-sheet paper tray included



OKIDATA
Authorized Dealer

- HP R Series II Compatible
- Design fits any desktop

\$CALL

386DX-33MHz 120MB SVGA SYSTEM

- 120MB Hard Drive
- 4MB RAM
- SVGA Monitor
- 101 Enhanced Keyboard
- MS-DOS

\$995

486DX-33MHz 120MB SVGA SYSTEM

- 120MB Hard Drive
- 4MB RAM
- SVGA Monitor
- 101 Enhanced Keyboard
- MS-DOS
- MS-Windows 3.1
- Mouse

\$1579

Multimedia Presentation! PROXIMA OVATION

- Projection of scanned photos
- 3-D Modeling
- Computer Simulation
- Video Projection with audio control
- Project 226, 981 Colors
- Compatible with VCR, LaserJet, Television, &
Video Signal

**Come in
for Demo!**

COMPAQ LTE 386 S/20 60 MB

- 20 MHz 386SX MICROPROCESSOR
- 2 MB EXP TO 10 MB
- 3.5" 1.44 MB FD

\$1195

COMPAQ MODEL N Excellent for Network Node

- 40MB Hard Drive
- 1.44MB Floppy Drive
- Keyboard
- Color VGA Card
- Desktop

\$299
Monitor not included

QMS PRINTERS

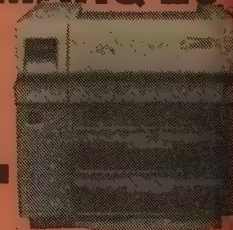
- PS 825, 8ppm. \$2195
- PS 815, 8ppm, 2 MB RAM 1895
- ColorScript 100 1805

AST PREMIUM EXEC 386SX/20 40MB

- VGA with 32 Gray Shades
- 2 MB RAM
- 386SX/20 MHz

\$1095

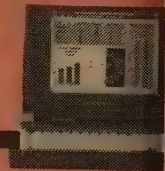
COMPAQ PAGEMARQ 20



\$CALL

COMPAQ CONTURA 3/25

- 80386SL-25MHz processor
- 4MB RAM
- 120MB Hard Drive
- Built in trackball, DOS
- Windows 3.1



\$CALL

OTHERS

- 660MB HD. CALL
- 10 Base T Ethernet Card CALL
- Shiva Fastpath 4 Gateway CALL
- Maxtor 340MB HD. CALL
- Everex 386-33, 386SX-20 CALL
- Everex 486-33 BEST PRICE
- COPAM 386-33,
4MB RAM BEST PRICE
- COPAM 386/33, 4MB RAM 795
- Canon BJC-820 Color Bubble Jet
Printer 1795
- Smart UPS 800/900/1200/2000 CALL
- Epson Equity LT-386SX NO HD. 599
- Sony CPD-1320 Color Monitor. CALL
- Mega Herts Internal 2400B Modem
F/Compaq LTE 386S/20 99
- Tempo 386SX-20 CALL
- PS/2 320MB HD CALL

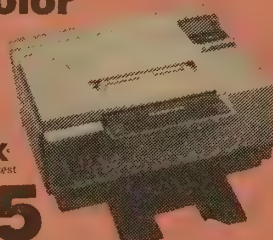
**Revolutionary technology lets
you print stunning, vivid color
on any paper**

Phaser III PX1

- PostScript
- Pantone Certified
- Prints on Paper or
transparency film

Tektronix
The best and the brightest

\$8095



TOSHIBA

- T2000SXe, 60MB. \$1195
- T3100SX, 80MB HD 995

TOSHIBA T4400SX

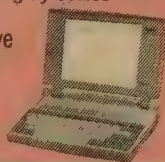
- 486SX/25 Processor
- 2MB RAM exp. to 10MB
- 80MB Hard Drive
- VGA LCD Display

\$2149

T1850

- 386SX-25MHz
- 4MB RAM exp. to 12MB
- VGA display with 64 gray scales
- 80MB Hard Drive
- 1.44MB Floppy Drive

\$CALL



COMPAQ

- LTE 386S/20, 60MB. \$1195
- SLT 286, 40MB 749
- Portable II, 40MB 599
- Deskpro 386/25M 1295
- Deskpro 486/25M CALL
- 101 Enhanced Keyboard. CALL
- 150/250/320/520MB Tape
Backup CALL

NEC

- Prospect SXc, Color,
386SX Color Screen Port. \$1095
- Colormate PS/40. 1995
- Model 90 Postscript 995

ZENITH DATA SYSTEMS

- Mstrprt 386SL/20, 60MB \$995

IBM

- 90-QJ5, 486/25 80MB HD \$1495
- 90-QJ9 160MB 1695
- 8515 Color Monitor 395

EXT. TAPE DRIVE

- Mountain 1.2 Gigabyte \$CALL
- Mountain 2.2 Gigabyte. CALL
- Mountain 300MB CALL
- QT-MAC 150 CALL
- QT MAC 250e CALL
- QT MAC 60e CALL

AMERICAN POWER CONVERSION

- Model 800 UPS CALL
- Model 900 UPS CALL
- Model 1200 UPS CALL
- Model 2000 UPS CALL

Fremont
3381 Walnut Ave.

Computerland of Fremont/Stockton

Stockton
4343 Pacific Ave.

M-F 9-6 pm • Sat. 11-5

(510) 794-9311
Prices subject to change

(209) 473-1241
Bring ad to get these prices

M-F 9-6 pm • Sat. 11-5
Not responsible for typographical errors

hp HEWLETT
PACKARD
Authorized Dealer

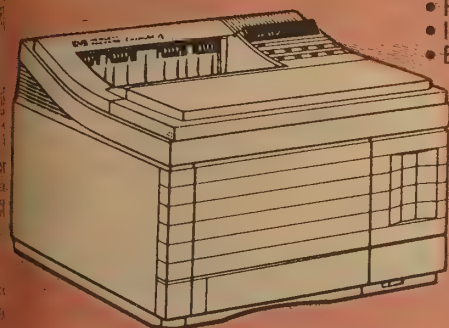
hp HEWLETT
PACKARD
Authorized Dealer

hp HEWLETT
PACKARD
Authorized Dealer

Computerland Presents 600 dpi HP LaserJet Quality At A 300 dpi Price

hp HEWLETT
PACKARD
LaserJet 4

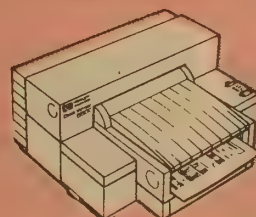
- 600 dpi print quality at a 300 dpi price
- Resolution Enhancement Technology and microfine toner for superior output quality
- Fast 8-ppm printing for complex documents
- Outstanding language and platform flexibility
- Full network capabilities (with options)
- Ideal for Windows environment
- Easy to use



HP LaserJet 4M printer with envelope feeder and lower paper tray

IN STOCK

HP DeskWriter 550C Printer

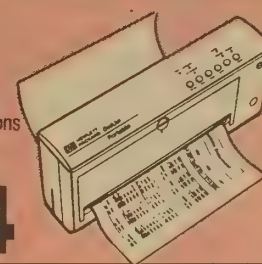


- 300-dpi, laser-quality black and color printing
- Convenient color printing with two ink cartridges
- Macintosh System 7.0 compatible
- 3-year limited warranty
- Professional-looking documents with 35 scalable fonts
- Integrated spooling for faster print speed

\$674

HP DeskJet Portable Printer

- 300-dpi, laser-quality printing
- Small, lightweight size — weighs just 4.4 lb. (2 kg)
- Fast print speed — up to 3 pages per minute
- Prints up to 100 pages on a single battery charge
- Variety of built-in fonts — 84 typeface, size, and style combinations
- Backed by HP reliability
- Optional accessories for maximum versatility



\$384

HP PaintJet XL 300 Color Printer

Laser-quality color and text on plain paper
Versatile color features
Connects with PCs, Macs, workstations, and more
HP LaserJet compatibility for easy integration
Network-ready
Optional Adobe PostScript Level 2



\$CALL

HP DeskJet 500C Color Printer For IBM PC

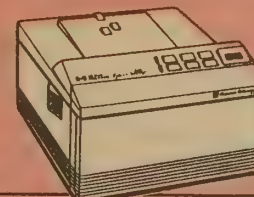


This color printer is ideal if you want primarily black output, but are eager to use up to 16.7 million colors and greyscale in your communications. Its 300 dpi color output rivals that of printers costing three times as much, plus it is networkable and prints on plain paper. Built-in print spooling plus Hewlett-Packard's dependable 3-year warranty

\$474

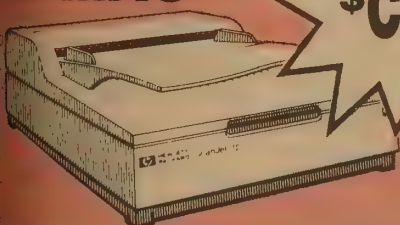
hp HEWLETT PACKARD **HP IIIP**

- Superior 300 dpi print quality
- Resolution Enhancement Technology
- Prints fonts and graphics faster than other laser printers



\$919

HP ScanJet IIP For MAC



\$CALL

Extremely Affordable

HP ScanJet IIC For MAC

The new HP ScanJet IIC gives you 5 levels of gray or 24-bit color professional quality documents supports IBM AT-compatible PCs' ProChannel or Macintosh personal computers



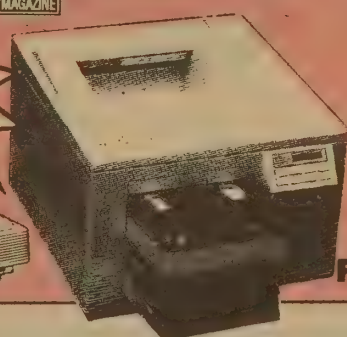
\$CALL



HP LaserJet IIIsi

Your network solution from Hewlett-Packard available for PC and Macintosh

**CALL OR
COME IN
FOR DEMO**



HP DeskWriter C Printer For Macintosh



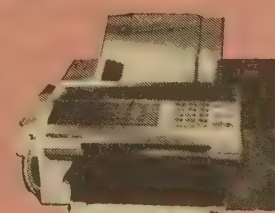
This color printer is ideal if you want primarily black output, but are eager to use up to 16.7 million colors and greyscale in your communications. Its 300 dpi color output rivals that of printers costing three times as much, plus it is networkable and prints on plain paper. Built-in print spooling plus Hewlett-Packard's dependable 3-year warranty.

\$CALL

HP FAX 310

- Both use Bond Paper
- 300 dpi output
- Sequential broadcast

\$CALL



Classifieds

Accessories

Accessories

Bulletin Boards

Bulletin Boards

Cartridge Refill

Cartridge Refill

AMERICA's High-Tech DICTIONARY

Acronyms & Glossary™

Dear Business Professionals learn the latest technologies: LapTops, Notebook computers, Human Interface, Jargon, NetWorks, Spreadsheet, DataBase, Graphics, Buzz Words, Software, KeyWords, Desktop Publishing, Lasers, Color monitors, VCR, CD-ROM, Novell, HDTV, MultiMedia, ASIC, PCMCIA, and more.

AMERICA's High-Tech Dictionary Hardcopy \$26.95
Shipping & Handling 3.53
California Sales Tax (8.25%) 2.22

[] check [] MasterCard [] Visa [] M.O. Total

Credit Card Number: _____

Expiration Date: _____

Signature: _____

PCS-86 Company 2798B So Bascom Av San Jose CA 95124

We have the Bay Area covered!

- 30,000 files, 5.2 Gigabytes
- PC-SIG Library on CD ROM
- Huge Adult Conference
- Local Numbers for many bay cities.

415-598-0398 San Carlos
415-992-3780 San Francisco
510-254-5455 Orinda
510-862-2200 Sunol
408-247-1717 San Jose

first ONLINE

FREE WINDOWS SOFTWARE. Windows Online (510)736-8343 bbs. Get those hard to find public domain and shareware Windows 3.x files. Call from your home or office, by modem. Assist your company with their Networking of Windows. ATTENTION: Windows Developers, upload your new DEMOS and Shareware for distribution. We provide 50 New Windows & DOS files everyday & currently 10,000+Win3 files. Over 650 message and support Conferences. Read our new magazine called "WinOnline REVIEW" with its full color graphics and hypertext, all in a Windows HELP file. Includes Windows Tips, shareware and commercial software reviews, New Win3 Product News and much more. All 13 lines are US Robotics Dual Standard modems to 16,800 BPS., 7.0 gigs of storage and Visa/MC accepted on-line for memberships. Call (510)736-8343 today. Sysop & Publisher, Frank Mahaney.

FIRST ONLINE. Over 30,000 files. 5.2 Gig! PC-SIG Library. Huge adult conference. All lines USR 1200-16,800 baud. REDWOOD CITY: (415)598-0398 SAN FRANCISCO: (415)992-3780 ORINDA: (510)254-5455 SUNOL: (510)862-2200 SAN JOSE: (408)247-1717.

Nitelog BBS. DOS, Windows, OS/2 and Adult Files. 11 Nodes (408)655-1096, 655-8294 v.32bis.

Cartridge Refill

Help the environment and save money! 100% guaranteed Toner Cartridges for HP, Canon, NEC, Panasonic, Apple, Brother, IBM, Wong, etc. and printers services. LASER CONCEPTS 1-800-675-9501 or 510-674-1501.

ORRIS TONER CARTRIDGE REMANUFACTURING COMPANY

We completely disassemble, clean and replace worn or defective parts, replace toner with high quality OEM toner and assign your cartridge with a tracking number.

Ink Jet Cartridges Refilled
Ribbons Re-Inked

\$6.00-\$12.00
\$1.00-\$7.90

1-(800)-484-9896-1055 • Local (408) 779-6940 100% GUARANTEE

Quality Remanufactured Cartridges

Ribbon

Top quality new ribbon replaces old ribbon, as good as new or better.

Laser Toner

High Quality after market parts make our cartridges better than new & 100% guaranteed.

Save \$ and help keep cartridges out of Landfill

We Buy Cartridges!

ReNew Printer Cartridge Corp.

(415) 363-2148

1(800) 303-2148

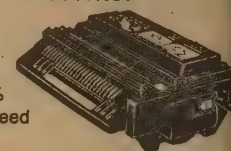
\$3 off first Laser Cartridge with ad.

Toner Cartridges

LaserJet & LaserWriter

\$27.50

100%
Guaranteed



PRECISION

LASER

(408) 727 - 8338

Laser Cartridges International (510) 526-2100. Remanufactured laserprinter or copier cartridges \$29.95 exchange. New cartridges \$74.95 exchange. We buy empties! Credit cards accepted. 100% guaranteed!

Laser Ace. Toner Cartridge charge for Laser Printers & Canon PC Copiers, \$34-\$ (408) 263-4608.

Toner Remanufacturing. HP * Car * Apple * IBM * Sharp Z * rics * NEC * Epson * Min * and 230 Others. Free PU/de * ery. Clement Enterprise * NOW ON THE PENINSUL * (415) 592-3900.

Display Your PC's Screen on up to 4 Monitors

Model 400 Video Splitter

Extension cables to 100 ft. available.

Perfect for classrooms, conferences, shows.

Made in USA

H & R TECHNOLOGY
SANTA ANA, CA (714) 641-6607

Works with all VGA monitors.

POWERSVISION

New revolutionary on-line buying & information service. Ground floor opportunity MLM. Income for Life. A no risk money making Opportunity. Call for details. (415) 388-8893

Custom Computer Cabinets* Save desk space*Tailored to your needs*Attractive styles*Free estimates*Armado Cabinetry (408) 423-6769.

Bulletin Boards

Printer sharing devices (wireless also). New ribbons, Laser toner cartridges, drums, bulk diskettes. C.A.P. (408) 452-0241.

Entrepreneur On-Line BBS (510) 791-0259. 2400 BOD 8M1. Multi-node BBS, 135,000 Megs on-line, small business person theme. Free IBM download first call.

HOW TO PLACE YOUR CLASSIFIED AD IN MICROTIMES:

MINI DISPLAYS: 1 column inch=1 5/16"x7/8" wide. \$49 per col/inch, camera ready art, or \$49 + \$20 for 1X typesetting/production fee.

BUSINESS ADS: Rates are \$15 for 15 words or less. 50¢ for each additional word. Your phone number counts as one word.

CATEGORIES: See index to choose the classification that best describes your product or service.

FREE ADS: Private individuals may have one free classified

ad of 15 words or less under Hardware, Software, or Accessories only. Mail coupon by the noon deadline for that issue, no phone orders for free ads.

No refunds will be given after copy is received. Credit may be given under certain circumstances

Mail, deliver or fax this coupon along with payment by noon deadline for that issue.

TO RESERVE SPACE

Phone Orders

(510) 934-3700

Fax Orders (510) 934-7351 with Visa or MasterCard only.

CLASSIFIEDS CATEGORIES

- ☐ HARDWARE
 - ☐ For Sale
 - ☐ Wanted
- ☐ SOFTWARE
 - ☐ For Sale
 - ☐ Wanted
- ☐ ACCESSORIES
- ☐ BULLETIN BOARDS
- ☐ SERVICES
- ☐ BAR CODES
- ☐ CARTRIDGE REFILL
- ☐ DESKTOP PUBLISHING
- ☐ DISK CONVERSION
- ☐ REPAIRS
- ☐ VOICE MAIL
- ☐ MISCELLANEOUS
 - ☐ Computer Rentals
 - ☐ Office Rentals

CAREER MARKETPLACE CATEGORIES

- ☐ Employment Information
- ☐ Jobs Offered

CONSULTANTS NETWORK CATEGORIES

- ☐ Accounting
- ☐ Business Opportunities
- ☐ Engineering
- ☐ Finance
- ☐ General
- ☐ Hardware
- ☐ LAN
- ☐ Programmers
- ☐ Software
- ☐ Technical Writing
- ☐ Training

Cost of ad _____ X number of issues to run _____ = Amt. enclosed

☐ Classified ☐ Career Marketplace ☐ Consultants Network

☐ Check/MO ☐ Visa ☐ MasterCard Credit Card # _____ Exp. Date _____

Name _____ Amt. _____

Address _____

City _____ State _____ Zip _____

Phone (_____) _____

SEND TO: MicroTimes Classifieds, 3470 Buskirk Ave., Pleasant Hill, CA 94523

DEADLINE FOR INSERTION IN THE MARCH 8, 1993 ISSUE IS NOON ON FRIDAY, FEBRUARY 19, 1993

C l a s s i f i e d s

CD-ROM

Photo CD Experts... ... that can help YOU!

- CD-ROM drives - multisession NOW!
- Photo CD Software - Kodak or custom (we are a Registered Kodak Desktop Developer)
- Photo CD transfer services/prints/players call us for help with your needs:

The AHLBERG Group, Inc.
(415) 851-4720

Photo CD Symbol is a trademark of Eastman Kodak Company

CD-ROM DRIVES

XA Compatible SCSI-II Double Speed
Texel DM-3024 and DM-5024
SCSI Interface cards Tranfor T130
Media Vision Pro 16

Multimedia upgrade kits • Compact Disc Software
Sony CD-ROM Caddies • CD-ROM Accessories

COMPUTERS AT LARGE
Saratoga, CA

Dedicated to CD-ROM Technology

Please Call for Our Price List
800-642-4194 408-255-1081
408-255-2388 Fax



Buy Sell Trade
Discount Prices

CD-ROM DRIVE
Photo CD comp. incl. controller
\$249

One Stop CD-ROM Shop
PC & MAC
Total Multimedia Support
Dealer Inquires Welcome
Price List & Newsletter
(707) 545-5442

The CD-ROM Exchange
Over 400 Titles

PIXIS!
QuickTime
CD-Movies

Rated Interactive
Adults Only

**CD
ADULT
MOVIES**

**Hundreds of CD ROMs, up-
grade kits and drives. Incred-
ible selection of the newest
shareware on CD ROM. Free
catalog. Call Multi-Media Trad-
ing Co. (510) 440-1800 fax
(510) 623-8570.**

**Adults CD ROM. All ROM disks
are menu driven and BBS ready.
Titles available PC-pix volumes
and 2,600+ mega bytes, \$159.
Erotic Encounters, worlds larg-
est adult CD ROM \$139. Storm
volumes 1, 2 or 3 \$159/each.
Ecstasy Hot Picks \$179. Cal Ad
Software, P.O. Box 50204, Long
Beach, CA 90815.**

Computer Insurance

SOFTWARE

INSURES YOUR
COMPUTERS!

Full replacement of hardware, media,
purchased software. From \$49
yearly. Covers fire, theft, power
surges, other accidents. Blanket
coverage; no list of equipment
needed. Low \$50 deductible. Call for
information or immediate coverage.

1-800-848-3469
Local (614) 262-0559

SAFWARE: The Insurance Agency Inc.
2929 N. High Street, PO Box 02211
Columbus, OH 43202

CD-ROM

Data Recovery



Data Protection and Recovery

Data Rx offers full data services:

- Data Recovery (hard disk & floppy)
- Data Protection (including anti-viral)
- Backup services (including offsite storage)
- Preventive maintenance consultation
- Data organization for optimization
- Software development

415-546-6450

1-800-234-4379 FAX: 415-546-1708

123 Townsend St. #445 • San Francisco, CA 94107

Disc Conversion

**COMPUTER DISK &
TAPE CONVERSIONS**

Micros • Minis • Mainframes
Duplications • Backup Retrieval
DATA CONVERSION SERVICES
415-456-7000

Data Recovery

Hardware

**Quality 386 and 486 custom
system at rock bottom prices.
1yr. full warranty. Call
(510)839-0307.**

Hardware

Hardware

TOP \$\$ PAID

**CPU, SIMM, Hard Disk, SUN
MICROSYSTEM, Silicon Graphics,
Work Station Board.**

(408) 998-7378

SPECIAL WHOLESALE PRICES

386SX-25 64K	\$746	486DX-33 64K	\$956
386DX-33 64K	\$819	486DX2-66 256K	\$1375
386DX-40 64K	\$825	486SX-25 64K/DX-50 256K	\$871/1280

All Systems Include:

Motherboard, CPU, 1.44 or 1.2 floppy drive, desktop w/power supply, IDE
controller + IO (2S, 1P, 1G), Super VGA monitor & card, 101 enhanced
keyboard, 1MB memory, 80MB HD.

Notebook 60MB HD & 2MB RAM	\$1035	HARD DRIVES	
Maxtor 1.2GB SCSI HD	\$1385	80MB/120MB	\$205/245
1GB Toshiba or 1.2GB	\$1045/\$1389	210MB/355MB IDE	\$360/565
174MB Conner or 540MB IDE	\$270/545	543MB SCSI	\$975
incl. over \$200 software pkg.		Fujitsu 520 IDE or SCSI	\$945/995
We do repair and service.		(5 yr. parts/labor warranty)	

**Call for laserprinters, scanners, memory upgrade,
networking, software, CD-ROM, local bus, bar coding.**

(408) 997-8380 Dealer call (408) 997-6944

DISK DRIVE DEPOT NEW 340MB SCSI DRIVE \$495!

NEW DRIVE SPECIALS

**Micropolis 330MB 16ms
SCSI drives \$495!**
**Fast IBM compatible SCSI
controllers from \$29!**
**IBM compatible CD-ROM
drive kits \$239!**

REFURBISHED SPECIALS

**Maxtor 200MB 15ms IDE
hard drive \$349!**
**Maxtor 640MB 16ms SCSI
hard drive \$895!**
**Maxtor 800MB Optical
WORM drive \$395!**
**1300MB 15ms COMPLETE drive kit
with cache controller .. \$1395!**

FULL SERVICE BACKUP & INSTALLATION

**DRIVE NOT BACKED UP? No prob-
lem... We'll backup to DAT, give
you the tape, install and copy
the files to your new drive. Trade
in credits available.**

THE DISK DRIVE DEPOT

**OPPOSITE FRY'S at
500E Lawrence Expressway
Sunnyvale 10-6 Tues-Sat
(408) 738-3895**

**GRAND
OPENING!**

We sell only factory new and top
quality CSC refurbished drives. No
inferior "used & surplus" units
sold here. One year warranty
standard on all hard drives, Five
year optional. Quantity discounts.

Computer Rentals

MacAcademy instructional videos
- Pagemaker, Photoshop,
Macromind, Free Hand, Excel,
Filemaker, Superpaint and more.
Sales and rentals (415) 255-9760.

Furniture

FURN-A-TECH Specialty, made-
to-order computer furniture for
home or office. A variety of fine
woods, laminates and finishes to
choose from. Call Rich at (415)
755-9172 or fax (415) 822-4243
for a no-obligation consultation.
FREE keyboard roll out this month.

Hardware

WHOLESALE PRICES. Tape
backup 525 SCSI \$740. 1GB
\$965, 2GB \$1365, 8GB \$1850.
Optical drive 1GB \$1695. 80MB
W/D \$205, 120MB \$275,
213MB \$360, 300 MB Fujitsu
IDE 256k 12ms 5yr warranty
\$765, 520MB Fujitsu IDE 256k
Cache 12ms 5 yr warranty
\$965. IDAC 17" flat model
#MF5217 + 24 bit New Dia-
mond card \$1015. CD-ROM
\$215, CD ROM external 5 disks
Gold Star \$420. We do Re-
pairs, trade for upgrading,
Memory Upgrades, Optical
Drives, & MathCO (408)997-
8380. For vendors (408)997-
6944.

Data Recovery

Data Recovery

**AVOID COSTLY DATA
LOSSES NOW**

DISCOVER ELECTRONIC VAULTING

*DATA RECOVERY

*BACKUP & RESTORE

*HARDWARE & SOFTWARE

*COMPLETE SYSTEMS

*CONSULTING

*SEMINAR & ASSESSMENTS

*PROJECT MANAGEMENT

*IMAGING SYSTEMS

CONSULTANT INQUIRIES WELCOMED
CALL ESSENTIAL DATA, Inc.
1-800-795-4756

HARD DRIVE SUPERSTORE

Featuring: *...start the Economy rolling!*

CONNER Quantum Maxtor
and more...

42mb \$119	105mb \$189	120mb \$249
212mb \$389	Q240mb \$469	340mb \$569
Q525mb \$929	540mb \$869	

PowerBook80mb \$339 PowerBook160mb \$529

... IBM-Compatibles / Macintosh ...

Dealer, Corporate, School SuperDiscounts!

**BEST PRICES! CALL FOR LATEST PRICES AND
SPECIALS! CALL US LAST! FREE SHIPPING!**

1-800-443-2377
Visa/MCard Welcome

Classifieds

Hardware

Backup power supply \$165. new, 225w. Protects against spikes, surges, blackouts, (20-30min.), and equipment damaging brownouts. (415)456-7000.

Mac POWERBOOK 100 4/40 (new) \$1149, Mac IIFX 4/80 E.K.B. \$3099, Mac IICI 5/120 E.K.B.(demo.-new) \$2599, Mac IICX 5/40 E.K.B. (new), Mac Quadra 700 4/0 (1999) \$3899, Mac SE 30 5/40 S.K.B. \$1699, Mac SE 4/40 S.K.B. \$899, Mac SE 1/20 S.K.B. \$749, Mac + CPU \$389, Laserwriter IINT \$1599, Outbound Notebooks (new) lowest, 52MB ext. HD (new) \$299, 40MB HD (new) \$259, Mac IISI Nubus Card (new) \$149, Apple IIGS Color System (complete) \$879, Apple IIe System (complete) \$499, Apple IIC/IIC + \$249/\$349. Other Mac/Apple II's CPU's & Peripherals (new & used). Call for excellent pricing and daily specials. M.P. COMPUTER MICRO SYSTEMS (415)960-1514/FAX (415)968-0509.

286/10, 1MB, 42 MB IDE, 1.2 FD, Mono Keyboard, \$450. Hi-Res, 415 dpi, PostScript printer, \$650/obo. IBM XT, 640K 21MB HD, 360FD, Mono keyboard, \$300. (408)727-8338.

UNITEK Hard Disk Repair. CONNER, SEAGATE, MAXTOR, PRIAM 40-59 \$2.50/MB, 60-79 \$2.25/MB, 80-99 \$2.00/MB, 100-149 \$1.75/MB, 150-199 \$1.50/MB, 200-299 \$1.25/MB, 300-399 \$1.05/MB, 400-599 \$.95/MB. Call Now! (408)395-0382.

NEC monitors-4FG/\$780, 3FGX/\$695, 5FG/\$1399, 6FG/\$2799; NEC multimedia ready CD ROM kits-internal/\$1129, external/\$1229, portable/\$950; Toplink Notebook-386/25SX (2160) \$1399; MM 17" VGA monitor-\$799; CMS 250MB T/Back-up w/Conner 170MB HD-\$599; Nuvo 2400bps int. modem-\$40; Nuvo Fax Modem 2400/9600-\$69; HP Laserjet II + III accessories-1MB memory board (upgrade to 4MB's) \$85, HP Legal tray/envelope tray \$49/59, Postscript font options, tax fonts etc. We also have in stock may Demo parts-monitors, controller, drives, memory etc. Please call or fax us for more information and pricing-GIGABYTES (510)790-0915.

Apple/MAC Products at Great Prices! We carry new and used Macintosh and compatible equipment. Please call or fax or for more info or pricing-GIGABYTES (510)790-0961, Fax (510)790-0915. We also do repairs!

IBM at great prices. IBM model 30 286 system with 30 MB drive IBM 8513 super VGA monitor with IBM mouse only \$500. For more info and prices on IBM products call GIGABYTES (510)790-0961, fax (510)790-0915. We also do repairs.

Hardware

Laptop Toshiba 3100E \$645 20mb/HD (408)997-6944.

Used Equipment. HP Vectra 286 \$250, IBM XT 20M \$150, IBM 50Z \$350, Compaq DP286 \$250, Compaq Port \$95, Compaq Port 10M \$125, Apple IIe \$75, Apple IIGS \$800, monitors from \$40, Dot-matrix & Lasers UPS from \$200. PCR (408)453-9322.

Small desktop XT computer with 3.5" FDD, serial, pakal, game, CGA/Herc. display adpt., 256K RAM up to 640K only \$49. Unopened fac. box monitor/keyboard sold separately. Hurry! send UPS (415)824-4005.

DONATE YOUR COMPUTERS to a genuine non-profit organization. We'll put it to work training students in a school or rehabilitation center. Get Tax Benefits and a Good Feeling! (415) 964-4064 the Computer Recycling Center, Inc.

QUANTUM 120MB IDE hard drive, fast 16ms access, 256K cache, \$210. Western digital 62MB, \$99. (415) 431-9711, S.F.

HP LaserJet III, 4 Megs RAM, Adobe Postscript Level II, Auto emulation switching. \$1600/OBO. (415) 584-6045.

Macintosh 512KE, two disk drives, extended KB, software, manual, box and lessons \$300. (415) 948-8143.

HP LaserJet IISi, 9MB, low page count, 3 trays, 2 toners. Like new! \$2600. (415) 626-4092.

Commodore - 128: Complete with drive, mouse, monitor, printer, GEOS-128 and tons of software \$250. (415) 647-3868.

Smith Corona PWP 7000 laptop word processor w/ printer (BO), tandy 1" portable word processor (BO) new software still in box (BO), 286 and 386 systems, parts, printers (BO) also hard drives (BO). (415) 282-4629.

Zenith XT, 512K-20M, color, 1200 band modem, great machine, \$150. (408) 439-0649 message.

PacificPage PE/XL v4.31, PostScript Emulator/Accelerator with 2MB for HP II/HD/IIIP/IIIP/IIIP. \$450. (510) 351-6207.

SCSI Host Adapter with drivers for CDROM, DOS, Windows, OS/2, NT. New, unused \$65. (408) 438-4895.

XIRCOM Pocket Ethernet Adapter, PE10BT-32K (twisted pair) w/software ver. 4.01, \$100. (408) 988-1948.

USED EQUIPMENT: HP Vectra 286 \$250. IBM XT 20M \$150. IBM 50Z \$350. Compaq DP286 \$250. Compaq Port \$95. Compaq Port 10M \$125. Apple IIe \$75. Apple IIGS \$800. monitors from \$40. Dot-matrix & Lasers UPS from \$200. PCR (408) 453-9322.

Hardware

IBM XT 640K+ 20MBHD two 360FD EGA color and softwares \$199. (510) 623-6637.

Everex 286-12, 1MB, 21MB Harddisk, 1.2 floppy, serial/parallel, VGA Card, VGA Monitor. \$350. (408) 942-0715.

Compaq Deskpro 386N, 40MB HD (New). No monitor. \$700/OBO. (510) 652-8139.

Sell, Floppy 360K, 20 meg HD, CGA, XT HD controllers, AT 1/0 cheap. (415) 579-0506 leave message.

Apple Image Writer LQ printer, good condition. \$150. Laurie (415) 543-4291.

Plotters - Hewlett Packard - 7221 T & 7475A \$350. each. Call Craig at (510) 932-5507.

Monitor, monochrome, amber 14" VGA in Sunnyvale \$40. (408) 736-4067

HB controller IDE & I/O card \$25. Floppy 1/2ht. 360K IBM \$20. Paul (408) 492-2148.

MacII CX8/80, RGB monitor c/ 57.0, lots of sw \$2450. (408) 473-4785, (510) 490-3211 eves.

Maxtor Drive 340 MB SCSI, New (not used) in original package with Mfg. warranty \$500. (415) 968-7650.

387DX-33 CYRIX coprocessor \$45; IMX9-80 SIMMS \$20 each; 2400/9600 modem & fax board \$40. (510) 656-1627.

GRID Laptop, XT backlit, 1.44 and 360K FD, no HD, modem, loaded. \$400. (510) 874-1718.

MAC SE30 4/40 keyboard, monitor, LAN card \$1290. Laserwriter II NX \$900/OBO. (408) 262-4618.

IBM-XT 640K, 21MB, 360FD, Mono, Keyboard, IS/2P/IG, \$220/OBO. (408) 264-7637.

IBM Pro Printer XL24 \$200. HP Laserjet IIIP like new, boxed, very little use \$850. (415) 752-1540.

SuperMac Thunder/24. Rated fastest 24-bit graphics accelerator board by MacWorld. Thai (408) 293-7652. \$2000/OBO.

IBM Color VGA Clone 386-33, 70HD, 2FD, extras \$800. (408) 779-6479.

Simms for IBM/Clone 1x9x70NS -New- \$110 for 4 Simms. Jim (408) 395-6020 eves.

HP Laserjet, legal & paper trays \$350; Procollection cartridge \$100; Conner 40MB \$100. Call (415) 442-1637.

SHARP QA-25 Projection Panel \$400. Phone Brian before 10pm, (415) 343-0983.

Toshiba T1600 Laptop 286; 3Megs RAM, 20 Meg HD (Stacked 40 Meg), Fax/Modem, batteries \$650. (510) 653-7322.

Scanner flatbed Abaton with type reader OCR software. Best OCR technology for only \$529. Call (408) 395-2622.

Hardware

IBMXT, 286/287 Turbo, 10MB, 360FD, 640K, Herc/Mono, keyboard, Modem. \$250/OBO (415) 961-2741.

Monitors, new, S-VGA \$150+, VGA \$130+, and some used one. Call (415) 637-1261.

Laserwriter II NTX - 2, 100 copies - Like new w/cover - \$1650. (408) 353-1669 B4 7am or eves.

AMIGA 2000HD, 1084 monitor, ECE midi, paint, animation, music, AmigaVision, new powersupply. \$750/OBO. (415) 255-1472.

IBM PS/2 486/33 upgrade w/ 4MB. VERY FAST! \$950. (510) 778-4127.

HARDWARE - FOR SALE Macintosh SE/30, 5MBRAM, 40MB hard disk, system 7, carrying case, \$1049. Mitch (510) 978-9636.

Hyundai 14" VGA Monitor, Hi-Res w/ VGA Card. New \$165. EGA Monitor w/ card, good condition \$125. Dennis (408) 252-9012.

SUPER 286 - 20MHZ, 2MB/42MB HD/1.2 MBFD, High Quality case, 14" VGA color monitor w/card. Manual/software/games. All for \$475. (415) 390-4429.

NCR 286/16, 1MB, 30MB HD, 1.2 MFD I/O. 101 KB, SVGA card/VGA color monitor. Excellent condition. \$425. Janet (408) 456-1960.

Apple Laserwriter IIG w/ photograde, 8MB. New condition, very low use. \$2100. (707) 762-7604.

Classic working CROMEMCO SYSTEM-3, CROMEMCO 3102 CRT and NEC Spinwriter. \$300/OBO Call Sven (415) 851-4720.

Hardware Wanted

I buy used computers and parts. Top money paid. Please call Ernesto (415) 668-2318.

WANTED: INTEL SATISFACTION Fax/Modem model 200 or 400. (503) 598-0490.

286 LAPTOP with 10MB Harddisk, or similar. Low cost, good condition. Call Larry (408) 262-8640.

Toshiba T1000, need 4 parts, 720K floppy drive must be working. Mike (510) 837-0983 msg or fax.

SEEK VIEWFINDER FROM BROKEN camcorders. Please call Larry at (408) 262-8640 or FAX (408) 262-1680.

Wanted - Real IBM AT, 1.2 FD, HD, EGA, Ext. kybd., WP 5.1 Nice. (415) 564-0887.

PLEASE HELP!! The Orchid Database, a nonprofit conservation organization, needs hard drives, portables, and other hardware. Donations are tax deductible. Please call 1-510-235-8815.

Hardware

Hardware

MICROTIMES CLASSIFIEDS WORK!

WARNING

Your PC is an open door to cranks, snoops and viruses! Stop them cold with the Boot Sentinel~

Try it out on your PC! Call or write today for a FREE DEMO DISKETTE

SentiSoft
4480 Treat Blvd., Ste. #137B
Concord, CA 94521
TEL: (510) 427-7176

LOW COST MAC & DRIVE REPAIR

MODEL	SWAP	REPAIR
*SONY, FD 800K	N/A	\$6
*SONY, FD 1.44MB	\$200	\$8
PRO40S, HD 40MB	\$200	\$11
PRO80S, HD 80MB	\$250	\$19
PRO105S, HD 105MB	N/A	\$21
MAC PCB AND P/S	N/A	CALL

* DOES NOT INCLUDE HEAD REPLACEMENT
WE BUY MAC'S AND DRIVES

DATA FIELD

1033 PECTEN CT PH408-946-6444
MILPITAS, CA 95035 FAX408-946-9333

MICROTIMES

CLASSIFIEDS WILL HELP YOU REACH THE TOP FASTER! CALL TODAY (510) 934-3700

SPECIAL SYSTEMS SALE

386DX33 128K\$1019
386DX40 128K 1032
486DX33 256K 1299
486DX50 256K 1475
All systems come with 4MB, 120MB HD, SVGA monitor SVGA card with 512k, 101kb mouse, DOS & Windows inst. 1 year warranty.
Maxtor, Conner, Harddrive, Panasonic, NEC, Oki Printer, Sony, NEC, Viewsonic Monitor
California Computer Co (510) 783-5108

Repairs

Repairs

Toner Cartridge Rechargers • APPLE • HP • CANON • QMS • Others
We buy used cartridges
the LaserDoc \$30
Free Pick and Delivery Available
Laser Printers • PC Copiers • Fax Repair Specialists
2355 Old Oakland Rd. Suite 1L, San Jose 95131 (408) 259-1778

COMPUTER REPAIR FREE DIAGNOSTIC

WHY PAY \$40, \$50 or MORE
Computer Training Academy will run a thorough diagnostic service check absolutely FREE!
Call Now for an appointment to have your equipment evaluated Today!
408-441-6990 ask for Mr. Stevens
CTA Inc.

Classifieds

Repairs

HARD DRIVE REPAIR PRICE			SALE PRICE	DATA RECOVERY
CAPACITY	MFH/IDE/RL	ESDI/SCSI	MFH/RL/ESDI/SCSI	MFH/RL/IDE/ESDI/SCSI
10 - 19MB	\$60	N/A	\$65	\$200
20 - 29MB	\$65	\$75	\$78	\$250
30 - 39MB	\$75	\$85	\$88	\$300
40 - 49MB	\$99	\$125	\$138	\$350
50 - 85MB	\$135	\$175	\$230	\$400
86 - 119MB	\$170	\$225	CALL	\$450
120 - 160MB	\$220	\$275	CALL	\$500
161 - 350MB	\$300	\$345	CALL	\$600
351 - 700MB	N/A	\$395	CALL	\$800

* Data recovery includes repair of the drive.
* No charge if we are unable to recover data.

FLOPPY DRIVE REPAIR PRICE	SALE PRICE
5.25" (360K & 1.2MB).....	\$20 \$22 & \$35
3.5" (720K & 1.4MB).....	\$25 \$30 & \$35
3.5" PS/2 (720K & 1.4MB).....	\$35 \$35 & \$50

**WE BUY & TRADE-IN
WORKING OR NON-WORKING
FLOPPY & HARD DRIVES**

MONITOR REPAIR PRICE	
Any Mono.....	\$45
Any CGA.....	\$60
Any EGA.....	\$65
Any VGA.....	\$75
Any Super VGA.....	\$80
Any Multisync.....	\$95
Any Terminal.....	\$70

CRT AND FLYBACKS EXCLUDED

SPECIAL SALE OF THE MONTH

Conner/Maxtor/WD/Seagate 40MB IDE.....	REF.....	\$129
Conner/Maxtor/WD/Seagate 80MB IDE.....	NEW.....	\$199
Conner/Maxtor/WD/Seagate 105MB IDE.....	NEW.....	\$215
Conner/Maxtor/WD/Seagate 130MB IDE.....	NEW.....	\$235
Conner/Maxtor/WD/Seagate 170MB IDE.....	NEW.....	\$269
Conner/Maxtor/WD/Seagate 210MB IDE.....	NEW.....	\$339
Conner/Maxtor/WD/Seagate 240MB IDE.....	NEW.....	\$369
Conner/Maxtor/WD/Seagate 340MB IDE.....	NEW.....	\$525
Seagate/Miniscribe 21MB MFH.....	REF.....	\$69
Seagate ST238 32MB RLL.....	REF.....	\$79
Seagate/Miniscribe 42MB MFH.....	REF.....	\$119
Seagate ST251-1 42MB MFH.....	REF.....	\$129
Tandon 42MB RLL.....	REF.....	\$89
Epson 1.2M & 1.4M Floppy Drive.....	NEW.....	\$39

MFH/RL Controller (AT OR XT)	\$39
IDE controller with I/O	\$15

SYSTEMS

86-12/16/25MHz.....	CALL
86SX-16/25/33MHz.....	CALL/CALL/\$999
86DX-25/33/40MHz.....	CALL/\$1039/\$1049
86SX-25/33MHz.....	\$1099/CALL
86DX-25/33/40/50/66MHz.....	CALL/\$1359/CALL/\$1579/CALL

ALL SYSTEMS ABOVE INCLUDE:

• 4MB RAM • 1.2 & 1.44 Floppy Drive • 130MB Hard Drive • 16 Bit Dual (1:1) HD/FD Controller • AT I/O Card 2S, 1P, 1G • 101 Enhanced Keyboard • 14" SVGA Monitor, 1MB SVGA Card • Mini Tower

PRO COMPUTER SERVICE COMPANY

14392 Hoover St., Suite B3
Westminster, CA 92683
Tel.: (714) 891-8293
Fax: (714) 891-3269



MONITOR REPAIR

**WE REPAIR: ANY SIZES - ANY BRANDS
SVGA - VGA - EGA - CGA - MONO - TERMINAL
and SUN WORKSTATION MONITORS**

Two days turnaround * Free estimate * Free pick up * Free delivery
120 days warranty both parts and labor * Lowest price

**CORPORATE ACCOUNT WELCOME
WE BUY AND PAY TOP PRICE FOR SURPLUS MONITORS**

California Monitor Services
4661 - A Lafayette St., Santa Clara, CA 95054
TEL: (408) 986-8327 FAX: (408) 986-8328

Repairs

LASER PRINTER REPAIR
\$59.00 + PARTS
(Seven days a week, 24 hours a day) • FREE Pick Up & Delivery in Bay Area • 1 Year Parts • 5 Years Labor Warranty
408-223-0433 • 415-777-5449
TCRC • LPR Division

C:\ Computer & Monitor Sale & Repair
Free Advice & Carry-In Check Up. State Reg. No. E29924
\$75+ Parts* PC Compatibles & Macintosh Monitors & Printers
SERVICE CITY
1655 Whipple Rd.
Suite 22, Hayward, Ca. 94544
Fax (510) 475-7739
*Carry-in service rate. tm055

MAC tronix
• New & Used Systems Sales & Service • IBM to MAC Data Transfer
• Network Design and Maintenance • On-site Service Contracts
• Electronic Transparency System • We buy used equipment
• Paperless Documentation • Interactive Multimedia
• Data Recovery • Software Training
45999 Warm Springs Blvd. Suite Nine • Fremont, Ca. 94539 • (510) 438-0833

MONITOR REPAIR
MULTISYNC \$90.00
SVGA & VGA 75.00
EGA 65.00
RGB HI-RESOLUTION 90.00
OTHERS CALL
Flat-rate (CRT & FLYBACK EXCLUDED)
DM MONITOR SERVICES
657 LA GRANDE DRIVE #1
SUNNYVALE, CA 94087
PHONE: (408) 245-8735

PC REPAIR. Inexpensive Repair of IBM PCs or Compatibles. Upgrades of all types. House Calls and Small Businesses Welcome. Guaranteed Lowest Prices. Please Call Ernesto at (415) 668-2318 or (415) 576-5057 (pager).

FACTORY LOW PRICES. SAMS
386-486 Computers & Network Servers. Sales, Repair, Upgrade. Network installer and cabling. Hector Phone/Fax (415) 821-0122 Pager 915-0346.

ON-SITE PC REPAIR. No travel charge, in San Jose. HATCH CONCEPTS (408) 226-2625.

Monitor and Terminal Repair. All brands \$65, free parts (CRT and flyback not included), pickup & delivery available, 90 days warranty, (415) 637-3968.

Repairs

Repairs

Bay Tool Electronics Co.
Monitor & Terminal Repair.
All Brands, \$65/each, most parts free. 180 day warranty.
BEST IN BAY AREA!
(415) 637-3968
957-R Industrial Road
San Carlos, CA 94070

UniTek Co.
Hard Disc Services
Specializing in repair of PRAM
CONNER, MAXTOR, SEAGATE Hard Drives
From 85¢ per MB
(408) 395-0382

Personals

Sexual Dates Bay Area Men/ Women/Gay/Lesbian/Bi-Sex Females. 1-900-844-2121 (\$1.95 per minute).

Services

DATA-RECOVERY
Self Engineered Tools Provide Over 90% Success Rate • Competitive Prices
Specializing in DOS, Novell, & Macintosh.
Micro Storage
2245 First Street, Suite 116 Tel (805) 582-9101
Simi Valley, CA 93065 Fax (805) 582-9102

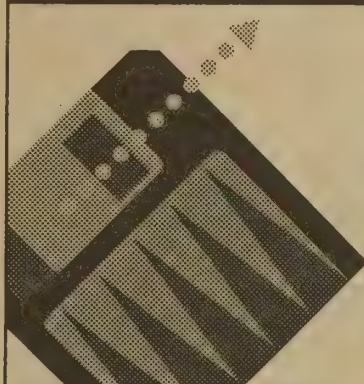
DATA RECOVERY
24 Hour Turnaround • Free Estimate
DATA-ONE 940 Rincon Cir. San Jose
(408) 434-1002 (HWY 880 & Montague)
9-5 Mon thru Fri

**Repair & Sale
Hard Drives & Floppy
Data Recovery**
SCSI ESDI ST506 PS/2 IDE
Novell XENIX/UNIX MACS
2122 Adams Avenue San Leandro, California 94577 (510) 430-0595
Drive Repair Services
6151 Golfview Drive Bloomfield Hills, Michigan 48301 (313) 645-6211

Services

Slides
4000 Line 35mm.
or 4x5 from most
IBM and Mac files,
including TARGA
510.451.3686

SOFTWARE DUPLICATION



Complete Software Manufacturing Solutions

- Duplication 100% Guaranteed
- Ultra Competitive Pricing
- Custom Labels/Sleeves/Manuals
- Packaging & Assembly
- Highest Quality Media & Equipment
- Fast Turnaround
- Volume Discount. Call for Best Price!

APC, Inc.

29620 Union City Blvd. Union City, CA 94587
Local 510-489-8677 Fax 510-489-8678

800-666-1007



*Post Attendees have sought
Information Technology Solutions at DB/EXPO!*

Moscone Convention Center
San Francisco, California

Conference • May 3 - 7, 1993
Exhibits • May 4 - 6, 1993

THE WORLD'S LARGEST DATABASE CLIENT-SERVER & INFORMATION TECHNOLOGY EXPOSITION AND CONFERENCE

Eight Answer-Packed Conferences

Over 100 sessions featuring 200 renowned industry experts, users and key technology vendors.

1. Executive DB/EXPO Conference
2. Client-Server Applications Development Conference
3. Client-Server and Data Warehousing Conference
4. Open Systems and Unix OLTP Conference
5. Object-Oriented and Evolving Technologies Conference
6. Desktop Database Conference
7. Windows Conference
8. Real Applications Solutions Conference

DB/EXPO is a registered trademark of NDN Enterprises Inc.

In-Depth Technical Seminars

Dr. Nathan Goodman
"Object-Oriented Database Systems"

Richard Finkelstein
"Evaluating and Using SQL Client/Server Software"

Alfred Spector
"Opening up your OLTP System"

Chris Date
"Advanced Aspects of the Relational Model"

Chris Loosley and Colin White
"Developing Client/Server and Cooperative Processing Applications"

Michael A. Goulde
"The Reality of Unix As An Application Platform"

Visit over 500 Leading Technology Exhibits showcasing the latest in Information Technology Business Solutions!

AMDAHL	DEC	NeXT
Andersen Consulting	Gupta Technologies	Novell
Apple Computer	Hewlett Packard	Oracle
Bachman	IBM	Parc Place
Borland	Information Builders	Pick Systems
Cincom	Ingres	Servio
Computer Associates	JYACC	Smartstar
Cross Access	Microsoft	Software AG
DataEase	NCR	Tandem
		and many others!

1-800-208-EXPO



Keynotes

Bill Gates, Microsoft Corporation

Steven Jobs, NeXT Computer

Larry Ellison, Oracle Corporation

Philippe Kahn, Borland International

Dr. Robert Epstein, Sybase

Morris Taradalsky, Apple

Dr. Patricia Selinger, IBM Corp.

Colin White, DB/EXPO Conference Director

Become more competitive in today's tough business climate!

If you're looking for solutions that will meet and exceed your information technology business objectives, then come to DB/EXPO '93, The World's Largest Database, Client-Server, and Information Technology Exposition and Conference.



Yes, I want to learn about Information Technology Solutions!

Please Send Me:

- ☐ My DB/EXPO '93 Information Solutions Conference Brochure
- ☐ _____ Complimentary Exhibit Passes
- ☐ Information on exhibiting

Please type or print clearly

Name: _____

Title: _____

Company: _____

Street: _____

Mail Stop: _____

City: _____

State: _____

Zip: _____

Telephone: _____

Fax: _____



NDN Enterprises
444 Castro Street, Suite 1101
Mountain View, CA 94041

1-800-2-DB-EXPO
Tel: (415) 966-8440
FAX: 415-966-8934

19

QUICK & EASY FAX FORM (415) 966-8934

C l a s s i f i e d s

Services

Services

Services

Software

Software

Software



The Laser Co.

Toner Cartridges

36⁹⁹

We support 200 laser printers and Cannon photocopy machines. New chemical process to coat the drum (extends the life of the drum to 7 recycle times). 20% more toner than the original. Free delivery (Bay area only) 100% guarantee or your money back Fast Service..... (patent Pending)

Isel Printer Repair Service Free Brochure Call 408 972-7915

HP series I, II and III, Apple Laser Writer Plus, IINT, IINTX, Cannon CX and SX engine specialist.
Free loaner, \$ 20 diagnostics fee

Don't Delay,
Do it Today!!!

DUPLICATION

IBM OS/2 • MACINTOSH • APPLE
COMMODORE • UNIX
24 Hour Turnaround.
Fastest in the West,
No Minimums!!! Custom Printed
Tyvek Sleeves & Labels
Optical Text Scanning

I.D. DISK CO. 415-883-4628
NATIONWIDE 1-800-882-6454

ON-SITE/ OFF PC Training:
Roxann Lewis, Certified
WordPerfect Resource offers
training in Excel, Paradox, Win-
dows, WordPerfect DOS/Win-
dows, Harvard Graphics, Lotus
23, PageMaker, More! 510-
283-6221.

Personalized Consultations.
Run your own computer busi-
ness. Become a computer pro-
fessional. (415) 728-5910.

**COMPUTER REPAIR FREE DIAG-
NOSTIC. WHY PAY \$40, \$50 OR
MORE.** Computer Training Acad-
emy will run a thorough diagnostic
service check absolutely FREE!!
Call now for an appointment to
have your equipment evaluated
today! (408) 441-6990 ask for Mr.
Stevens CTA Inc.

expensive printer repair. Dot
Matrix, HP Laserjets, Daisy-
wheel Printers. Please call
(415) 668-2318.

Business Consultant cash flow,
accounting, business start-up
questions, taxes, marketing
free consultation Len Marsh
(415) 591-6664.

**Macintosh/IBM Systems &
Printers.** Rentals, Repairs &
Upgrades, Sales-New & Used
Classrooms, PC Support. PCR
(408) 453-9322.

PHOTOGRAPHY FOR BUSINESS.
Computers, lots more commercial
experience. Call Len Cook for rea-
sonable bid. (510) 790-6079.

**Macintosh/IBM Systems &
Printers.** Rentals, Repairs &
Upgrades. Sales-New & Used.
Classrooms. PC Support. PCR
(408) 453-9322.

VIOLATION PROTECTION SERVICE.
Protect yourself from harmful vi-
ruses. Call Dan or Mike to sched-
ule installation of unopened virus
protection software on your PC or
Mac-LAN. Dan (415) 854-9542 or
Mike (408) 997-8386.

Slides

Slides \$8
4x5 Transparencies

PC Imaging Specialists
Presentation Graphics
Quattro Pro
.TGA .PCX .TIF .GIF

McLain Imaging
tel: (408) 252-6266
bbs: (408) 252-6265

Software

Are you sure you're getting all of your health benefits? Claim Chek/macClaim Chek's master records remembers payer, patient, provider and subscriber information. Keep track of who's paying what, paid/unpaid claims, deductibles and copayments, types of claims, and single or multiple policies. Add-on modules available for claim form printing. On-line help. 4 Mice rating-MacUser 12/92. Macintosh or MS Windows \$44.99 + \$5 S/H

TeCorporation—Developers of software for everyday living
P.O. Box 140, Campton, NH 03223
Tel: (603) 726-7177 Fax: (603) 726-8818

CODE 10TM

(A Graphic Link Language)

VAPORWARE FOR LICENSE

Code 10 is a visual language using OS/INDY, an independent operating system in a 3-D matrix. Using fixed-size icon primitives in a Cartesian architecture, CODE 10 is the cyberspace platform of tomorrow.

HACK THIS CODE

✕ If you're not a Corporation, or operating like one, hack this code. Corporate licences available.

Quantal Research Group, Inc.
537 Valley Street, San Francisco, CA 94131

Software

Free Public Domain Software.
Thousands of PD Programs in our CD-ROM. Come in and copy your favorite programs, FREE! Bring your own disk...a service provided by SERVICE CITY. 1655 Whipple Rd. Unit #22 Hayward. Call (510) 475-0747 for details!

TrueType fonts for Windows
3.1. Shareware. 100/\$20. 300/\$60 360+ Postscript fonts \$72.
(415) 728-5910.

**DISCOUNT ADULT VGA SOFT-
WARE!** SVGA+VGA XXX GIFS:
10MB \$20, 30MB \$50, 100MB
\$125. 200 adult stories only
\$25! 10 EXPLICIT ANIMA-
TIONS or 10 EROTIC MOVIES
only \$25! or send 20 for six
disk sampler. CAL-AD SOFT-
WARE, PO BOX 50204, Long
Beach CA 90815.

10 MEGS FOR \$10

"Shareware" Greatest Hits!
Over 30 of the best Shareware/Freeware programs!
Specify 3.5" or 5.25" HIGH capacity disks.
Add \$3 s/h. Call or write for a

ByteSize Software
35 Saddle Dept. E111
Laguna Niguel, CA 92657
(714) 343-9663

FREE
DISK
CATALOG

CALL OUR BBS AND ORDER ON-LINE

APPLIC. SOFTWARES:

- POS & Gen. Acctg.
- Medical Practice
- Dental Practice
- Veterinary Practice

OPERATING SYSTEMS:

- DOS, OS2, VM-386
- Windows, DesqView
- PC-MOS & QEMM
- XBase Network Systems

BBS: (510) 687-3633
TEL: (510) 687-3629

HARDWARES:

- PCs, MACs
- Notebooks
- MultiUser I/O
- VGA Multistation
- Drives/Controller
- CD-ROMs
- more...

CUSTOM PROGRAMS AT VERY LOW RATES IN:
QB4.5, C, ASM, CLIPPER, dBASE, FoxPRO, Single or Multi-User

IBM Software. 100s to choose from \$2 per disk. Send \$1 (shipping & handling) for your shareware catalog on disk. Computer Allware PO Box 1060, Clearlake Oaks, CA 95423.

FREE PRINTED 122 PAGE CATALOG 3400+ IBM Prgms. ASP Vendor Sunshine Software, 6492 South St. Suite 470, Lakewood, CA 90713.

SACRIFICE SALE: Paradox for DOS v4.0 - \$250. C++ v3.1 - \$200. UNOPENED, REGISTERABLE. 415-579-2621 eves.

Mac, In-House Accountant 1.0 - thousands sold at \$199., now \$39., upgradeable, dealers welcome. (805) 481-7822.

WinTax for federal and state income taxes \$29. Available for use for free at designated computer stores. (415) 856-0106 or (408) 746-0603.

Electronics Tutorial Software Program. Over 1,000 screens, 48 modules of interactive information, schematics and help on DC, AC, analog and digital. Use for job preparation, review, or study. Entire program \$30. IBM. Open quotes monochrome EGA/VGA closed quotes. Tutor-Tech, 5591 Kimberly St, San Jose. (408) 252-3223.

3D Studio (Autodesk) \$1500/ OBO. New, unopened. Includes CD of images. Professional animation. (408) 423-9690.

PCTools 8.0 \$50, SuperStor \$30, Stacker \$30, Norton Utilities \$40, Norton Desktop \$40. (415) 732-5776 eves.

CD-ROM SALE: COMPTONS ENCYL. (WIN) \$150. BERLITZ FRENCH (Mac) \$75. Others as low as \$20 or trade. (415) 864-7240.

QFX Hi-Res; Autodesk 3D Studio and Animator Pro—All packages unopened. Negotiable. (415) 566-8681.

Harvard Project Manager 3.0 \$60. (415) 964-5785.

FREE SEXY SOFTWARE and other share ware. For complete details and listing, mail SASE and \$1. to Software: 39120 Argonaut Way STE 432, Fremont, CA 94538.

X10 Home Automation PC Software, controls electrical appliances by time and sensory input. \$75. (510) 830-8929.

ORACLE Card V1.1 \$125. Power Builder V1.0B \$299. Word 5.5 DOS \$80. OS2 2.0 \$20. Paul (408) 492-2148.

HOW TO MAKE YOUR INTERVIEW DISK. Includes easiest to use expert system engine ever. \$15. IBM-PC. Ron Heath P.O. Box 4833, Santa Clara, CA 95056.

Lan Server 2.0 for OS/2 \$350/ OBO. Call Craig at (510) 439-2831 between 5-9.

Employment Information

900 NUMBERS MAKE MONEY! Put your computer to work! Outstanding guidebook, 24hr. recorded details 1-800-369-1410.

PROGRAMMER, FOXPRO for small, successful, family-operated Mendocino winery & vineyard. Requires experience in Foxpro2 business apps., Novell Netware installation/maintenance. Health/dental, profit sharing, vacation, co-operative environment. Prefer FT w/ desire to work in wine prod. Will consider PT or consultant. Send resume & specific project completions to Ted Burnett, Navarro Vineyards, Box 47, Philo, CA 95466.

\$200-\$500 WEEKLY. Assemble products at home. Easy! No selling. You're paid direct. Fully Guaranteed. FREE Information-24 hour hotline. (801) 379-2900. Copyright #CA088850

Novell Netware v3.11 20-user. Two packages left in stock. \$1600 new. Out of business. (415) 343-7659.

ATI Graphics Ultra Plus, 2 MB, mouse. Brand new, box, warranty. Latest Windows drivers \$300. (408) 743-1091.

All new unopened OS2 2.0, Dr Dos 6.0 \$70, \$30. (415) 345-4768.

Employment Information

SALESPERSON WANTED. Computer Retail Store. Min. 1 yr. exp. in sales. Knowledge of computer hardware and software. Computer major/background preferred. F/T, good base salary + commission. Contact: Jennifer at (415) 896-1765.

Jobs Offered

Computer programmer wanted for any language custom programming project. Knowledge of SPSS helpful, but not required. For more info contact Coleen Weeks at (415) 394-0300.

Consultants Network

Accounting

TAX & BOOKKEEPING SERVICES. Income tax preparation/year-end bookkeeping. Individuals, professionals, small businesses. (510) 540-6735.

Business Opportunities

Make \$25,000 per year, part time, cleaning computers. For FREE information call 1-800-695-2569.

Engineering

Mechanical design: 3D Hewlett Packard ME30 CAD Solid Model System. Also: Engineering prototype development. (510) 376-3241.

PCB LAYOUT: Using Pads software, fast turnaround, satisfactory grantree, lowest rate. Fax or message (415) 493-6826.

Product Development. 3D CAD, Plastics, Electro/Mechanical, Prototype through production experience. Call for guide. (510) 783-3006

Consultants Network

Engineering

ENGINEERING: POWER SUPPLIES Des/dev power supplies & battery chargers. Circuit Power, Don Frevert (408) 739-0303.

MECHANICAL DESIGN AND DRAFTING. ACAD Services AT Reasonable rates (408) 926-4128.

Finance

Finance

NEED CASH?

We pay top \$ for privately held notes, mortgages and trust deeds **NATIONWIDE!**
Personal Mortgage Invest. Co. (510) 278-9916

General

GET MORE OUT OF YOUR COMPUTER!

Friendly computer wizard with experience will help maximize your use of: ■ Accounting ■ Word Processing
■ Database ■ Spread Sheet
Free first consultation • Sampson Information Systems
415/469-9852

MERIT



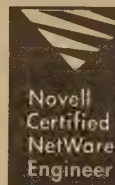
Clipper, Paradox, C, C++, Pascal, Networking,
D-Base, Windows Programming
• Reasonable Rates •
24 Hour Phone Service • (707) 552-2618

COMMUNICATE! WIDE ARE PRIVATE NETWORKS. Automatic, Unattended PC Communications. Appropriate. Inexpensive. LAN interface. Effortless Offsite Backup Available. Augustine Associates. 415/285-7064.

COMPUTER CONSULTANT/TUTOR HW/SW Installations, Configurations, Friendly Personalized Tutoring • \$25/hr. AAA COMPUTER NUT (408)376-0987.

Computer Problems? For inexpensive trouble shooting. Call PC Consultants Now! (415)589-3385 or (510)569-9003.

LAN



LAN & WAN Installation, maintenance, administration, system configuration, trouble shooting, connectivity, and requirement definition. If you have a system in place, we can fine tune it. We are your one stop networking solution.

Call Michael @ (415) 941-2647

General

Custom Programming

Low Rates • High Quality Obj. Orient. Prog. Latest tools
C, C++, Vis. Basic, ADA, DOS, Windows, Unix, X, Motif, etc.

Many professionals
20 years exper. BSEE, MSEE/CS
Developed large, medium and small systems.

SOFTWARE A TO Z, INC.
Ph: (408) 263-0775
Fax: (408) 263-0777

LAN

NOVELL SPECIALIST

-Install, Service, Troubleshoot
-Custom Network Software
-Backup Service
& Data Recovery
-Certified NetWare Engineers

ABSOLIC COMPUTING
(415) 858-2680

NOVELL NETWORKS, CNE. Design and Installation, Hardware and Software Configuration, Plus Support and Service. Free consultation. COMTEQ COMPUTER CO. (408) 988-4440.

BATTERY BACKUP FOR NOVELL with shutdown and monitor software 750VA, new, \$399. (408) 986-8300.

Programming

CUSTOM PROGRAMMING

- FoxPro
- Clipper
- dBase IV
- Accounting Systems
- Bar Code Systems
- Multi-user

NETWORK INSTALLATIONS



NOVELL®

SINCE 1983 • MEMBER BBB

AccountTech

408/995-5511

MACINTOSH MY SPECIALTY

Spreadsheet • Database • System Programming
Installation, training, troubleshooting
purchase advice — Mac and PC

Stanford C.S. degree • good references
Ken Brooks 415/856-1224

Legal

INCORPORATION. Nevada \$399, CA \$299. Do yourself books Trademark, Copyright, Patent (408)559-3949.

CEEPRO SOFTWARE

Dbase C FoxPro
Multi-user GUI
Business Applications
for Windows
(408) 236-2072
Kim (415) 964-6593

IMMIGRATION

Law Offices of Paul M. Heller
Specializing in
Labor Certification & Work Visas

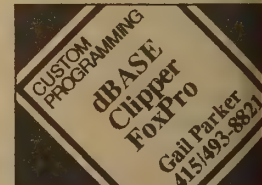
for
Engineering, Computer,
Accounting, Business, &
other Professionals.

Also: family visa/US
spousal cases; change to
student (F-1) status;
Treaty Trader/Investor
(E-1/E-2); Intra-company
transferee (L-1).

Individual, Bus. & Corp.
Clients

Free Consultation!

415-291-8000



Business Applications

Programming

Contact Jim at:
(415) 747-0748
Including:
Dbase Clipper FoxPro

Software Development

Real-Time,
DOS, Windows
High Quality, Low Cost
(408) 446-4846

Best competitive rates. Programming/Maintenance Offsite at our location. Unix, Dos, Windows on PC, C++, Assembly, Cobol. Quality at the best price. We work with consultants. EMail @ MCI ID: 542-5787. ARX voice: (408)-736-3770. ARX fax: (408) 733-6548. ARX Software Inc.

ICE Ltd. - Overseas S/W development in Cochin, Kerala, India. DOS, UNIX, Windows, C, C++ Cobol our specialty. Rates from \$18/hour. Satellite link capability. Local agent at (408)-733-8851 or EMail on MCI TSreekskumar EMS: VSNB/MCI 495-5791. MBX: f=sreekskumar MBX: g=pck.

BANKRUPTCY

Stop lawsuits, wage garnishments, & calls from collection agencies.
Free consultation.

Experienced Bankruptcy atty.

San Jose (408) 295-0470

S.F. (415) 552-6358

MACINTOSH CONSULTING

Yoyodyne SYSTEMS
Apple Certified Tech.

- On-site Mac Training • HW/SW Installs
- Networks • Purchase Advice

(415) 879-0285

LOOKING FOR SMALL BUSINESS SOLUTIONS?

LET US MAKE YOUR PERSONAL COMPUTERS WORK FOR YOUR BUSINESS

PAY ONLY FROM INCREASED PROFITS

CALL 408/226-2646 TO FIND OUT HOW!

HATCH
Specialists in Small Business Improvements

Professional Technical Services
DOS, Windows & OS/2 support for business

- Setup & configuration • Networks • Communications •
- On-site support • Data recovery • Programming • Debugging •

Database & Spreadsheet programming - Excel & Paradox
On-site support available 24 hours a day - 7 days a week

John Purins 415-571-8673

Consultants Network

Programming

Programming, Assembly, 8096 8051 Labtex, (408) 377-4824; fax (408) 559-7630.

Microsoft Access Programming databases converted to windows, forms & reports built. On-site or off-site. E.P.I. (510) 632-8366.

Experienced C/C++/ASM programmers seek consulting work on applications for DOS or Windows. (415) 961-1744.

OFFSHORE SOFTWARE SERVICES AT 50% OF YOUR COST! Data Entry, Software Development, QA, Maintenance, and Porting. DOS, UNIX and MAC. Contact REMOTE SOFTWARE SERVICES, 59 Lupine Ave, Suite 203, San Francisco, CA 94118. Tel: (415) 386-0984 Fax: (415) 386-0284.

XWindows, NeXTstep Graphical User Interface design and development by Unix software engineer. Tacit Technologies (510) 606-0151.

Paradox, Custom Programming training and consulting. Single & multi-user. Novell Network Managerment Systems Solutions 408-684-2023.

VERY LOW RATE. Quick turnaround, offsite, C, dBase, FoxPro, Oracle, Clipper, Paradox, more, Haystack Systems (415)441-4891.

Computer Consultant. Custom Paradox Database Application Development. Call Andy at Computek Slutions (408) 241-0863.

Q&A by Symantec, "#1 Database Word Processor for Business" Expert Training, Programming. FLETCHER SYSTEMS (707)585-9282.

BAR CODE INVENTORY. Efficient "C" Systems. Quick Delivery. National References. 1-800-872-1182.

PARADOX/FoxPro. Custom design and application development for single and multiuser. (408)266-7678.

Tech Writing

German Translation of technical instructions, manuals and correspondence by native professional. Call/fax (408) 923-3782.

Spanish Translation. Accurate technical translation of manuals, instructions, letters messages. Carrali Design (408)737-8196

Documentation, customized manuals, help text and training materials for your software or application. Larry (415)692-0824.

Dr. DOCUMENT
House calls for ailing
-Product Help, Guides,
-Manuals, Specifications,
-Document Management
(510) 527-8736
Have MAC/PC Will Travel

Training

Flexible, Affordable Instruction
Day, Evening & Weekend. Today's Most Popular PC Software Packages. Our Classrooms or Your Site. Windows, WordPerfect, PageMaker, 123, etc.
Systems Support Technology
415/252-1840 • Fax 415/252-1848

Services

Training

ON-SITE/ OFF-SITE PC TRAINING
Quality Affordable Trng. On-Site or at one of our Training Centers Near You 510-283-6221

AutoCAD R++ and R12 training. Individual or group, 2D, 3D, solid modeling. Pat (510) 656-3965.

COMPUTING FOR THE TERRIFIED. Master the basic principles of word processing in only three concentrated hours \$60. (415) 986-0502.

MOVE UP WITH TECHNOLOGY. Learn Oracle, Sybase, Gupta and Client/Server tools and applications in small class. Prepare yourself for new career, downsizing and new applications. Call CompuEd (408) 253-4508.

ABC of Printing. Lecturer for DTP Designers. 40 yrs BizziBB 6363 Christies #407 E-Ville, CA 94608.

WORDPERFECT Certified Instructor. Planning, training, macro programming, document assembly. As profiled in InfoWorld. Kendall Callas (415)921-6850.

Mac Programming. Learn in 3 hours. Saturday 9-12, MT. View \$79. Register (415)903-4922.

Services

**L A S E R
PRINTER
REPAIR**
APPLE • HP • QMS • BROTHER • & More
On Site Service • Tune-Ups • Service Contracts
FREE ESTIMATES! • Dec. Special 10% off
LaserSharp (San Jose) Authorized Technicians
(800) 894-8974 or (408) 224-0520

LATEST TECHNOLOGY Lowest Prices. Guaranteed!

MICRONICS 486-33 VESA Local Bus Super VGA System

- MICRONICS VESA Local Bus Motherboard
- Built-in VESA Local Bus IDE Controller
- 64K Cache
- 4MB RAM
- 213MB IDE Hard Drive
- VESA Local Bus Windows Accelerator SVGA Card with 1MB
- 14" Non-Interlaced Monitor 1024x768 .28mm
- 1.2MB & 1.44MB Floppy Drives
- 2 Serial, 1 Parallel ports
- 101 Keyboard

\$2099

486-33 Super VGA System

- 486-33 Motherboard, 64K Cache
- 4MB RAM
- 120MB IDE Hard Disk
- 14" SVGA Monitor 1024x768, .28mm Interlaced
- 1.2MB & 1.44MB Floppy Drives
- 2 Serial, 1 Parallel Ports
- 101 Keyboard

\$1388

486DX2-66MHz \$1799

HARD DRIVES

105MB IDE.....	\$219
120MB IDE.....	259
210MB IDE.....	369
340MB IDE.....	579
535MB IDE.....	925

PRINTERS

HP LaserJet IV	\$1399
HP IIP	979
HP IIP+	799
DeskJet 500 /DeskWriter	399
DeskJet 500C /550C	529/729

SOFTWARE

WordPerfect for Windows Upgrade	\$99
Microsoft Excel Upgrade	129
Microsoft Access (While Quantity Lasts)	99
Paradox for Window (Introductory offer)	135
Microsoft Mouse with Trivial Pursuit	79

COMMUNICATIONS

Fax/modem Internal 96/48/24	\$59
Above with Software for Windows	69
Modem /Fax 14.4K Internal	239
Modem /Fax 14.4K External	289
Pocket Fax/Modem Ext. 96/24	129

WE ALSO CARRY SIMMS, LASER PRINTER MEMORY, MATH CO-PROCESSORS AND MORE!



**Monarch
Computers**

(510) 526-7741

Fax (510) 526-7859
863-B San Pablo Ave.
Albany, CA 94706
Hours: M-F

9:30am to 6:00pm
Prices subject to change without notice.
Not responsible for typographic errors.

**MicroTimes
Reaches over
1/2 Million
Readers
every month.**

For Advertising 510-934-3700 213-851-8600
Information Call: 408-244-4400 714-939-2809

Continued from page 130

would later be changed, unbeknownst to the inspectors or the field office, and the potential for a database disaster mounts exponentially.

Faced with this challenge, Bowers and her team managed as best they could, reconciling the field office database with the original paperwork, slowly getting the system under control. The woman in charge of information management at field office headquarters was eventually able to supply data from the FEMA

database in an ASCII file, which Bowers could open in a Mac and use it as a backup system to her team's database by comparing FEMA's data with their own. Using databases as a lookup files for checking numbers, backing up every step of the way, comparing and correcting data, they began instituting fail-safe controls and procedures as they went forward.

First thing each morning, the office staff would meet with the field inspectors face-to-

In addition to handling its share of the the disaster database, the Packard Bell 486 also generated the field office payroll—using FileMaker Pro 2.0 for Windows.

face, check out their work from the day before and enter it into the database in their presence. Then the field inspectors took their new batch of work orders and went back out to do more inspections. At seven each evening work orders would come from FEMA and be data-entered overnight so the inspectors would have their new work assignments each morning after being checked out on yesterday's batch. Both Bowers and the inspectors could agree on the accuracy of each day's information for the purpose of managing payroll and transmitting accurate data back to FEMA.

IMPLICATIONS FOR THE FUTURE

Having thoroughly tested the Outbound under combat conditions, Bowers would like to see the machines used in future disaster management. They can cable into an IBM network, print anything, are truly portable, and extremely field-worthy. They work on batteries and can be recharged by a car, effectively converting a rental car into a functioning office, right on the spot. Of course, the latest version of FileMaker Pro would be loaded onto each laptop with a pre-formatted database...

Other ideas—an RV outfitted as a mobile field station, capable of operating off battery power, complete with cellular phones and radios. This would provide a field office right where the inspectors are working, so they wouldn't have to drive for an hour in heavy traffic, after a long day in the field, just to report in. On a more practical level, all data transmittal should be done electronically, or at the very least on diskette. (Julie Bowers, Raindance Publishing, 415/454-9876) ■

LOOK NO FURTHER...

We Have Everything You're Looking For—Call And Be Amazed!

PORTABLE COMPUTER CENTER

WE ARE ABLE TO CUSTOM BUILD ANY DESKTOP CONFIGURATIONS INTO OUR PORTABLES TO SUIT YOUR NEED. PLEASE CALL FOR OPTIONS LIKE INTERNAL CD ROM, TAPE BACK-UP SYSTEM, UP TO ONE GIGABYTE IDE, ESDI OR SCSI HARD DISKS.

HI CONTRAST VGA PLASMA PORTABLE

- 4 MB Memory (Expandable To 32 MB)
- 1.2 MB & 1.44 MB Floppy Disk
- 120 MB IDE Hard Disk*
- SVGA Card w/1 MB
- 2 Serial/Parallel Ports
- 200 Watt PS / 110/220 V
- Plasma Display On/Off Switch
- External Display Up To (1280x1024)
- 2 Full / 1 Half Length Slots Free
- Deluxe Carrying Case

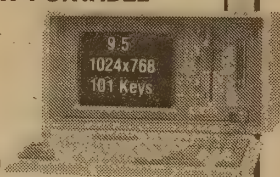
- 486DX-66 w/256K Cache\$2745
- 486DX-50 w/256K Cache\$2595
- 486DX-33 w/256K Cache\$2445
- 386DX-33 w/64K Cache\$2045



SUPER VGA COLOR CRT PORTABLE

- 4 MB RAM (Up To 32 MB)
- 120 MB IDE Hard Disk*
- All-Media 1.2 & 1.44 Floppy
- 2 Serial/Parallel Ports
- 3 Drive Bays
- 5 16 Bit Slots
- SVGA Card w/1 MB (32K Colors)
- Carrying Case

- 486DX2-66/50/33 256K VESA Local Bus*CALL
- 486DX-66/50 MHz 256K Cache\$2795/2675
- 486DX-33 MHz 256K Cache\$2495
- 386DX-33 MHz 64K Cache\$2145
- 386SX-25 MHz\$2125
- * REMOVABLE HARD DRIVES ARE AVAILABLE



BLACK & WHITE LCD PORTABLE

LUNCH BOX PC (Looks Like and Has Same Configuration As The Plasma Above)

- 486DX-66 MHz w/256K Cache\$2295
- 486DX-50 MHz w/256K Cache\$2145
- 486DX-33 MHz w/256K Cache\$1995
- 386DX-33 MHz w/64K Cache\$1695
- 386SX-25\$1495



PISCES ALL-IN-ONE PC

1495 SVGA 386SX-25 MHz

- 1 MB RAM Up To 16 MB
- 1.44 MB F.D. (Option Ext 1.2)
- 40 MB H.D. Up To 340 MB
- 16 Bit SVGA Video/101 Keyboard
- 2 Serial/1 Parallel Ports
- Two 16-Bit Expansion Slots

DESKTOP SYSTEM MONTHLY SPECIAL

- 486DX-66/50/33 (Local Bus) *BEST
- 486DX-66 w/128K Cache\$1495
- 486DX-50 w/128K Cache\$1395
- 486DX-33 w/128K Cache\$1245
- 486DX-33 CYRIX w/128\$1145
- 386DX-33 w/64K Cache\$995
- 386SX-25\$945

ALL SYSTEMS ABOVE INCLUDE:

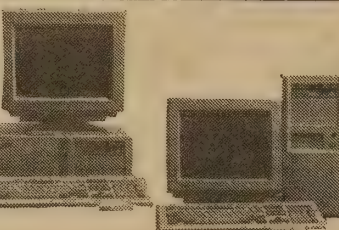
- 4 MB RAM (70ns)
- 130 MB Hard Drive 16ms
- Teac 1.2 MB or 1.44 MB Floppy
- SVGA Monitor (1024x768 .28 dpi)
- SVGA Card (1024x768)
- IDE 2HD/2FD Controller
- Enhanced 101 Keyboard
- Desktop or Mini Upright Case
- Hi-Res Mouse
- MS Windows 3.1 & DOS 5.0
- MS Works or GeoWorks

OPTIONS:

- 256K Cache Add \$30
- Non-Interface Monitor Add \$40

PLEASE CALL FOR:

- ★ Other Configurations
- ★ System Upgrade/Repair
- ★ Hardware/Software Installation



CONTROLLER & ADD-ON CARDS

- Adaptec SCSI 1742A\$375
- Adaptec SCSI 1542B\$215
- Adaptec SCSI 1522\$140
- Bustek SCSI BT 542BK\$165
- Future Domain SCSI 1670\$155
- Ultrastor SCSI 14F\$225
- IDE Intelligent Controller For 4 FD\$75
- IDE Controller w/2S/P/IG\$25
- Ethernet Card 16 Bit COAX\$75

MONITORS

- Super VGA (1024x768 .28mm)\$259
- Super VGA (1024x768 .28mm) Non-Interlaced\$295
- Viewsonic 6E Non-Interlaced\$335
- 15" SVGA (1280x1024 .28) Non-Interlaced\$545
- 17" SVGA (1280x1024 .26) Non-Interlaced\$665
- 20" SVGA (1280x1024 .31) Non-Interlaced\$1550

VIDEO CARDS

- Diamond Stealth 24 Bit ISA\$185
- Diamond Stealth 24 Bit VESA\$185
- Orchid Fahrenheit 24 Bit\$215
- SVGA w/1 MB, 512K\$60/40
- SVGA Hi-Color (1280) w/1 MB\$79

FAX MODEM/MICE

- 144/144 Fax Modem Int.\$225
- 9600 Baud Modem Int/Ext\$205/225
- 96/24 Fax/Modem V.42\$79
- 2400 Baud s/MNP5\$35
- Logitech Mouseman Ser/Bus\$65
- Logitech Cordless Mouse\$84

DRIVES

- Micropolis 670MB SCSI, ESDI\$1195
- Maxtor 675 MB SCSI\$1145
- Maxtor 540 MB IDE\$895
- Maxtor 340 MB IDE/SCSI\$875
- Maxtor 213 MB IDE\$345
- Conner 120 MB IDE\$230
- Colorado 250 MB Tape Back-Up\$245
- Colorado 120 MB Tape Back-Up\$185
- Teac All Media 1.2 & 1.44 MB Drive Combo\$145
- Teac 1.2/1.44 MB\$55/50

Prices subject to change w/o notice

Dealer Pricing & Quantity Pricing Available

STORAGE SYSTEM ENGINEERING SERVICE

3350 Scott Blvd., Building 19, Suite 1902
(near Bowers Ave.)
Santa Clara, CA 95054

(408) 727-6040

Your Source For
Reliable Computers
& Peripherals Since 1983

S.F.	Lawrence Expy.	S.F.
Control Expy.	Bowers	San Tomas
San Tomas		

FAX: (408) 727-6042

Hours: 10am-6:30pm M-F
12noon-4:00pm Sat



NOTEBOOK SPECIAL

**We Stand
Behind:**

**Technology
Quality
Service**

**Don't You Be
Caught
Holding The
Lowest Price!**

Why spend countless hours of your valuable time getting your computer system installed with the components you **THOUGHT** you were getting in the first place? Whether you come to **Roger Willis Computers** or not, be sure to insist on the original configuration you ordered! Come to **Roger Willis Computers** & experience Reliability, Service & Support the first time! And, if you want to upgrade, plug into our 24 hour turnaround service!

**Here at Roger Willis
Computers**, we can get you anything from Motherboards, Hard Drives & Monitors to Video Cards, CD-ROMS & Multimedia upgrades. **Kiss!**

1-800-429494

486DX-33MHz

- 4 MB RAM
- 120MB Hard Drive
- Weight 5.72lbs w/o Battery
- Dimensions 11"x8.6"x1.93"
- 2 Serial, 1 Parallel
- Absolutely Loaded!



32 Gray Scale \$1999
256 Color \$2799

VESA Local Bus \$1355

ISA Bus \$1295

486DX2-66MHz W/256K Cache

- 1.2MB and 1.44MB Floppy Drive
- 4 MB RAM 70ns
- 80MB Hard Drive
- SVGA Monitor 1024x768 .28 Dot
- SVGA Video Card w/1M
- 2 Serial, 1 Parallel, 1 Game ports
- 101 Keyboard



VESA Local Bus \$1495

ISA Bus \$1440

486DX-50MHz W/256K Cache

- 1.2MB and 1.44MB Floppy Drive
- 4 MB RAM 70ns
- 80MB Hard Drive
- SVGA Monitor 1024x768 .28 Dot
- SVGA Video Card w/1M
- 2 Serial, 1 Parallel, 1 Game ports
- 101 Keyboard



VESA Local Bus \$1540

ISA Bus \$1485

486DX2-50MHz W/256K Cache

- 1.2MB and 1.44MB Floppy Drive
- 4 MB RAM 70ns
- 80MB Hard Drive
- SVGA Monitor 1024x768 .28 Dot
- SVGA Video Card w/1M
- 2 Serial, 1 Parallel, 1 Game ports
- 101 Keyboard



VESA Local Bus \$1635

ISA Bus \$1585

486DX-33MHz W/128K Cache

- 1.2MB and 1.44MB Floppy Drive
- 4 MB RAM 70ns
- 80MB Hard Drive
- SVGA Monitor 1024x768 .28 Dot
- SVGA Video Card w/1M
- 2 Serial, 1 Parallel, 1 Game ports
- 101 Keyboard



33MHz \$999

40MHz \$999

386DX-33/40MHz W/128K Cache

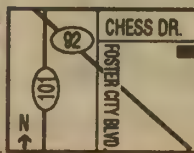
- 1.2MB and 1.44MB Floppy Drive
- 4 MB RAM 70ns
- 80MB Hard Drive
- SVGA Monitor 1024x768 .28 Dot
- SVGA Video Card w/1M
- 2 Serial, 1 Parallel, 1 Game ports
- 101 Keyboard



Roger Willis Computers

**1163 Chess Drive, Suite D
Foster City, CA 94404**

FREE Labor 1 year on Parts.
Prices subject to change w/o notice.



1-800-433-9494

**Local Calls (415) 572-2996
Fax (415) 573-1566**

SUPER SYSPER SAVINGS

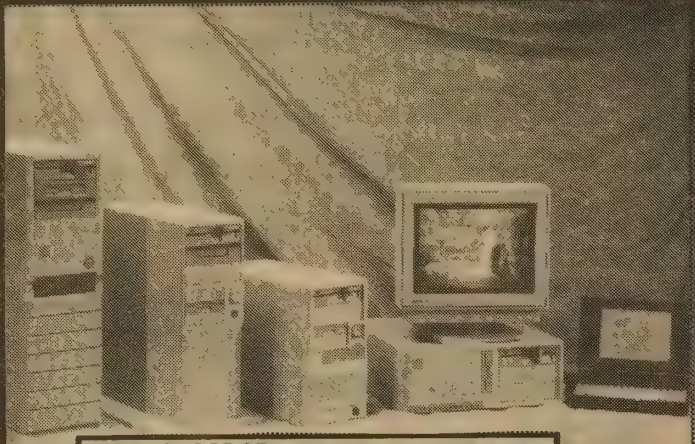
486 MULTIMEDIA PC

**INTEL 486SX-25
W/170 MB HARD DRIVE
W/CD-ROM, SOUND BLASTER
PRO & STEREO SPEAKERS**

SYSPER MULTIMEDIA Systems Include:

- 4 MB RAM/64K Cache
- 1.2 MB or 1.44 MB FDD
- 170 MB IDE HD
- SVGA Monitor
- SVGA 1 MB Card
- 101 Keyboard
- IDE Controller w/1S/1P/1G
- Desktop Case w/230W PS
- High-Performance CD-ROM Drive
- Sound Blaster Pro Card
- MIDI Kit
- Microsoft's Windows Graphical Environment w/Windows 3.1
- Additional CD-ROM Titles Including Microsoft Bookshelf Encyclopedia
- Stereo Speakers

ONLY \$1095



**2 YEAR LABOR
1 YEAR PARTS WARRANTY**

30 DAY MONEY BACK!

SYSPER 486 VESA LOCAL BUS

**486-33 486DX2-66
\$1445 \$1725**

• WITH 32 BIT LOCAL BUS
16 MILLION COLOR VIDEO CARD
• DRAMATICALLY IMPROVES GRAPHIC SPEED!!

SYSPER LOCAL BUS Systems Include:

- SVGA Color Monitor .28 Dot
- IDE Controller 32 Bit VL Bus
- 32 Bit VL Bus Video Card
- 64K Cache on Board Exp to 256K
- 4 MB RAM Exp to 32 MB
- 1.2 MB or 1.44 MB FDD
- 130 MB Hard Disk w/64K Cache
- 1 Parallel/2 Serial/1 Game Ports
- 101 Key Keyboard
- 200 Watt Power Supply
- Baby AT or Mini Tower Case

SYSPER 486 ISA SERIES

W/130 MB HARD DISK & SUPER VGA COLOR MONITOR

BOTH DX & SX SERIES SYSTEMS INCLUDE:

- 4 MB RAM on Board
- 1.2 MB or 1.44 FDD
- 130 MB IDE Hard Disk
- 16-Bit VGA w/512K
- 14" 1024x768 Super VGA Monitor
- 1 Parallel/2 Serial/1 Game Port
- Desktop Baby or Mini Vertical Case
- Math Co-Processor Socket
- Clock/Calendar w/Battery Back-up

486SX-25 w/128K \$1025
486DX-33 w/128K \$1195
486DX2-50 w/128K \$1295
486DX50 w/128K \$1365
486DX2-66 w/128K \$1465

SYSPER 386 SERIES

W/80 MB HARD DISK & SUPER VGA COLOR MONITOR

BOTH DX & SX SERIES SYSTEMS INCLUDE:

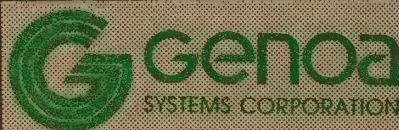
- 1 MB RAM on Board
- 1.2 MB or 1.44 FDD
- 80 MB IDE Hard Disk
- 16-Bit VGA w/512K
- 14" 1024x768 Super VGA Monitor
- 1 Parallel/2 Serial/1 Game Port
- Desktop Baby or Mini Vertical Case
- Math Co-Processor Socket
- Clock/Calendar w/Battery Back-up

SX33 \$725
DX33 w/64K CACHE ... \$795
DX40 w/64K CACHE.. \$815

MICRONICS 486 VL BUS SYSTEMS

- MICRONICS 486-33 VL-BUS
- 4 MB, 70ns, exp to 64 MB
- 64K Cache Exp to 256K
- Maxtor 130 MB, 15 MS Hard Disk
- 101 Maxi Keyboard
- Teac 1.2 or 1.44 MB Floppies
- MICRONICS VL-BUS Video Tseng
- SVGA Non-Interlaced Monitor .28
- MICRONICS VL-BUS IDE Controller
- Built-In 2 Serial/1 Parallel Ports
- Mini-Tower/Desk Top Case

**486DX-33 486DX2-66
\$1755 \$2225**



VESA LOCAL BUS

VESA STANDARD LOCAL BUS SYSTEMS

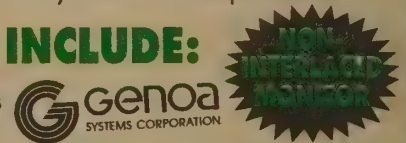


**The TurboExpress 486VL Motherboard
And Windows VGA 24 Video Adapter!**

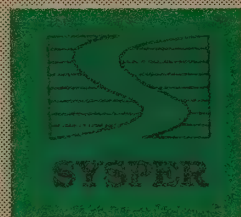
The TurboExpress along with the WindowsVGA VL series provides speed and 16 million true colors computing power you need, at the price you can afford. The TurboExpress has been tested and approved with a broad and growing list of commonly used software products

SYSPER LOCAL BUS SYSTEMS INCLUDE:

- Genoa TurboExpress 486VL Motherboard
- 32 Bit Local Bus Genoa Video Card with 16 Million Colors
- 32 Bit VL-BUS IDE Controller
- SVGA Non-Int Monitor .28 dot
- 128K Cache on Board Exp to 256K
- 4 MB RAM Exp to 128 MB
- 1.2 MB or 1.44 MB Floppy Drive
- 130 MB Hard Disk w/64K Cache
- 1 Parallel/2 Serial/1 Game Port
- 101 Key Keyboard
- 200 Watt Power Supply
- Baby AT or Mini Tower Case



**486DX-33MHz 486DX-50MHz 486DX2-66MHz
ONLY ONLY ONLY
\$1549 \$1749 \$1849**



SYSPER TECHNOLOGIES, INC.

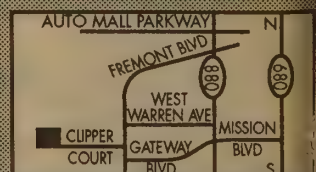
4031 CLIPPER COURT, FREMONT, CA 94538

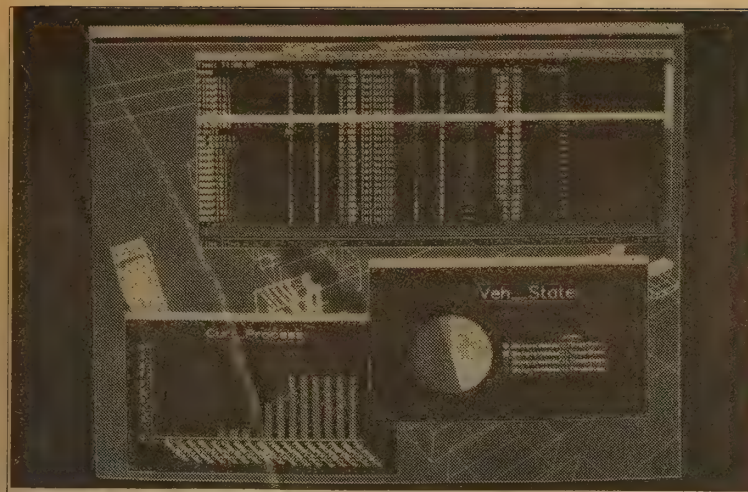
HOURS: MON-FRI: 9AM-6PM; SAT: 10-4 PST

FAX: (510) 651-9699

TEL: (510) 651-8002

**PRICES SUBJECT TO CHANGE W/O NOTICE.
NOT RESPONSIBLE FOR TYPOGRAPHIC ERRORS**





Model in background with statistics generated by automod in foreground

Continued from page 150

next tick of the simulation clock. It is sorted by priority. When a load is taken off the top of the list, it runs all the actions in its procedure that it can before encountering a delay. Then, the next load is taken off the list, and so on, until the list is empty.

Order lists are lists of loads that are dependent on other loads to allow them to continue activity in a simulation model. One way of looking at an order list is as a scene in which there are two main actors, the loads waiting to be ordered into action, and the load that will do the ordering.

Park lists are lists of empty locations suitable for vehicles to park, which are searched after vehicles fail to find tasks to perform. Load activation lists are lists of locations where loads can look to find parked vehicles to wake up. Load activation lists are like load search lists, except that when an empty vehicle is located it is not called but only "awakened." As soon as a vehicle is awakened, it begins to search works and part lists for tasks to perform.

Altogether, there are ten different basic vehicle scheduling procedures: pick up, set down, task search, idle, move to deliver, move to retrieve, move to parking, wait for load, load leaving territory, arriving at station, and leaving station.

COMPETING FOR RESOURCES

Loads have to compete for any resources that have a finite capacity. The interaction of loads with resources is simulated as loads acting on resources, rather than the other way around. The way loads compete for position and resources is by an important method known as claiming. Before actually moving to a new region or taking possession of a resource, loads attempt to lay claim to them first. Since only one load can successfully make such a claim, this is the method used for resolving competition for resources, and it is of course where bottlenecks can and do appear.

In most visual simulation models, since loads move on and off work stations and vehicles or conveyors, there must be a way of handling this visually in an easy, flexible way. In AutoMod, Terminal Control Frames are used to specify where pieces of geometry can attach themselves to objects during simula-

tions. If a vehicle needs to pick up loads, then a Terminal Control Frame has to be attached to the vehicle where the loads will be put. More than one control frame can be attached to objects like vehicles, which gives them multiple locations to store loads.

DETAILED KINEMATICS

As mentioned, an optional Kinematics module allows articulated motion to be added to simulated objects like robots, machines, people, etc. This extension delivers what's perhaps the real attraction of AutoMod for many users, the ability to run simulations with fully elaborated, custom 3-D animation.

The Kinematics module generally makes use of custom graphic shapes built with the ACE (AutoMod Creation Editor). First you have to use AutoMod proper to draw a movement system of some type and create a Process system. The Kinematics module has its own set of windows for operating on model layouts. You place the custom shape on the model and then add kinematic motion to it. You use the Table of Possible Paths to set up all the possible movements. For example, a custom model of a truck can be used, and the Kinematics module then allows you to animate a dump action for it.

One of the most common uses of Kinematics is for animating the movements of robotic arms. In the case of a robot, the joint is the axis about which links rotate or move laterally. Dynamic links can be made up for a set, a shape, or a set of shapes. Joints are similar to knees and elbows—the points where degrees of freedom of movement are located. The Joint Position window is provided for assigning rotation or translation movements to joints.

Kinematic movement is constructed with systems of shapes called configurable systems. To model movements, Kinematics makes use of a Table of Possible Paths. If you select the Animate Path button on the Table of Possible Paths window, this displays the Animation window, which you use to animate a particular path. You can also set the Clock Speed option, which determines how many units of clock time elapse between screen updates during an animation.

THE SIMULATION ENVIRONMENT

In order to run a simulation, you must first compile a model, perhaps by using the HiC compiler on the DOS platform. This is an important feature of the AutoMod tool to be aware of—because simulation models you construct must generate C code and then be compiled before you can run them, there are some definite limitations to how AutoMod can be used. For instance, you cannot change a model during a run and immediately see

the results of the change.

Since the real attraction of AutoMod is what it can do when equipped with the various extension modules, which are sold for additional cost, many users probably plan on adding their cost to that of the main module right from the outset. For this reason, bundled versions are sold at a lesser cost than the price of each module if bought separately.

Many users will undoubtedly feel that most

Fully detailed simulations are extremely rare because of the tremendous time and cost usually involved in their construction. The tradeoffs revolve around getting as much relevant detail in the least amount of development time. AutoMod introduces some new factors into the equation because of its 3-D visual simulation capabilities.

or all of these modules are rather essential—especially Plotter, IGES/SIM, and AutoStat, for example. For others, the Kinematics and AutoView modules will seem equally essential. The Plotter utility allows AutoMod models to be output to HP plotters and PostScript printers. This is the sort of thing that is nearly always included as an intrinsic part of a program, rather than an option. And it really is hard to imagine any user wanting to be without it. The IGES/SIM package is a utility for importing and exporting AutoMod graphics to and from CAD packages.

AUTOVIEW

As mentioned, AutoView is an extension that

many users would find essential. Without it, you can't restart your animation runs and move back and forth in them in time and space. And by preparing camera description files, with AutoView you can also make "movies" or 3-D walkthroughs based on simulation models. In other words, this is the real VR and multimedia module for AutoMod.

Although AutoView uses run files that have been created in simulation runs using AutoMod proper, it can be used to completely alter those animations with regard to the cam-

era view angle and the timing spent at different locations.

Working with AutoView involves using the Snap Control facility of AutoMod, and writing camera description files. In AutoView, a snap is a section of time, or a snapshot from one of your simulation runs. To be able to use AutoView with run files, you have to have set the desired options beforehand in the Define Snap control window in AutoMod proper. Every snap you want to use has to be defined separately. AutoView snap files can get quite

large very easily—the usual size that's workable is between 1 and 10MB.

When you first bring up AutoView, your model looks just as it did in AutoMod. But you can change that using View Control. To make things move in a fully defined animation with smooth flow, pans, and zooms, you have to write a script file using a text editor. There are two different ways to create animations using script files. One is to read a series of saved views in sequence. The other is to describe and control the actual changes desired in models by using the AutoView script language. Obviously the first method is quite a bit easier than the second, though limited in what it can accomplish.

Camera descriptions include settings for camera position, orientation, and focal length; the velocities and accelerations involved in changing from one state to another can be specified explicitly, or implicitly by simply specifying the state for the camera to be in at a certain time.

AUTOSTAT

AutoMod also has a separate add-on package for doing statistical analyses of simulation runs. AutoStat allows you to boil the spectacle down to precise numerical performance parameters.

It has three basic building blocks: responses, factors, and configurations. Models that don't terminate, but go into some type of cycle, might have a warm-up period before they settle down to their steady state behavior. If so, you might not want to collect statistics for the warm-up period, but only for the system after it has reached its steady state. AutoStat has an automatic facility called Warm-up Determination for ascertaining how much time to skip for the warm-up.

Once you've decided the questions you want your model to answer, and how the answers can be measured as quantities, you can define responses to represent each of the parameters you need.

The main window of AutoStat has a total of five different scrollable text panels. Three of them are arranged across the top, and are actually list boxes that show the respective responses, factors, and configuration used in the model. The two remaining subwindows extend across the full width of the screen, one showing the sample values and the other results of analyses. AutoStat provides various graphing capabilities to help you visualize what's going on with your model. For example, you can plot 2-D graphs of a response vs. a factor or a response vs. a configuration.

AutoStat comes with a large library of statistical attributes available for responses and factors, including many that are specific to various AutoMod subsystems such as processes, AGVs, conveyers, etc.

Songtech International, Inc. Tel: 510-770-9051 Fax: 510-770-9060

POWERFUL PORTABLES!

KINGTECH LCD PORTABLE

- 640 x 480 Supertwist LCD Screen w/Built-in Backlight
- Run VGA/EGA/CGA/MGA Mode
- 200 Watt 110/220 Auto Switch P/S
- Detachable 89-Key Keyboard
- Two 5.25" FDD, One 3.5" HDD
- Six Expansion Slots
- Weight: 16 lbs.
- Dimensions: 16" (W) x 9" (H) x 7" (D)

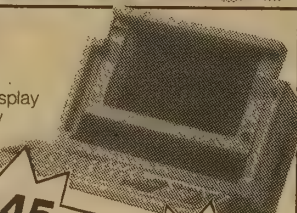
CRT PORTABLE w/9" MONITOR: \$345
SVGA COLOR PORTABLE: \$1250

CASE ONLY

GAS PLASMA PORTABLE

- High Resolution Gas Plasma Display
- 640x400 Pixel Graphics Display CGA/VGA
- 80 Characters x 25 lines
- 9.25" x 6"
- Detachable 84-Key Keyboard
- 110/220 VAC Auto Switching
- RS-232 Serial Port
- Parallel Printer Port
- External Monitor Port
- Soft carrying bag

CASE ONLY



\$845
Paper White

\$1295
VGA+

486-50
MHz
EISA

\$1945

486-33
MHz VESA
Local Bus

\$1650

486-50
MHz
w/64K Cache

\$1695

486-33
MHz
w/64K Cache

\$1495

386-40
MHz
w/64K Cache

\$1150

386-33
MHz
w/64K Cache

\$1095

486-25
MHz

\$1250

386-25SX

\$1075

SYSTEM CONFIGURATIONS:

- ♦ High Quality Motherboard
- ♦ 4 MB RAM On Board
- ♦ 1.2 & 1.4 MB Floppy Drive
- ♦ SVGA Monitor .28mm DP
- ♦ 120 MB Hard Drive
- ♦ 1 MB VGA Display Card
- ♦ Mini-Tower Case w/200 W PS
- ♦ Enhanced 101 Keyboard
- ♦ Mouse
- ♦ IDE I/O (2S/P/G) Controller

SYQUEST REMOVABLE HARD DISK (SCSI TYPE)

- 44 MB Model SQ555
- 88 MB Model SQ5110
- 44 MB Cartridge SQ400
- 88 MB Cartridge SQ800

External Available

COOLING FAN \$29
FOR 486 CPU

VIDEO CARDS & MONITORS

- 14" Mono \$95
- Super VGA 1024x768 0.28" \$265
- Oak VGA Card 16 Bit, 256K \$35
- Trident Super VGA 16 Bit, 1 MB 69
- Nanao 16" 9070U \$900
- Impression 14" Non-Interlace \$315
- Impression 14" Super VGA \$275

HARD DISK SPECIALS

- HH 1050 44 MB MFM \$180
- Conner 40 MB IDE \$150
- Conner 120 MB 19ms IDE \$250
- Conner 170 MB IDE \$285
- Conner 200 MB 19ms IDE \$375
- Conner 500 MB 16ms IDE \$950
- Maxtor 130 IDE \$265
- Maxtor 210 MB IDE \$365
- Maxtor 340 MB IDE \$590

MATH CO & MEMORY

- 80387SX-25 \$75
- 80387DX-25 \$75
- 80386DX-33 \$85
- 80387DX-40 \$95
- 256K SIMM Module \$12
- 1 MBx9 SIMM Module \$38
- 4 MBx9 SIMM Module \$140
- 386, 486 CPU IN STOCK
- Cooling Fan For CPU \$29

KEYBOARDS

- Enhanced 101 Click (baby) \$29
- MTEK 104 Click \$38
- MaxiSwitch 101 \$35
- Keytronics 101 \$45
- Omnikey 101/102 \$69
- Omnikey Ultra 130 \$99

FLOPPY DRIVES

- Teac 5 1/4" 1.2 MB FDD \$60
- Teac 3 1/2" 1.44 MB FDD \$55
- Teac 1.2 & 1.44 Combo Drive \$149

MULTIMEDIA PACKAGES

- Sound Galaxy NC \$129
- Sound Galaxy NXPro \$159
- CD-ROM \$275

COMPUTER CASES

- Slide-In Case w/200 W PS \$69
- Mini-Tower w/200 W PS \$59
- Mid-Tower w/200 W PS \$85
- Full-Tower w/230 W PS \$115
- Big-Tower w/250 W PS \$165

POWER SUPPLY

- 200 W AT \$39
- 230W XT/AT \$45
- 285W AT \$55
- 300W AT \$65

CONTROLLER CARDS

- Adaptec 1542K SCSI \$285
- Adaptec 1540A SCSI \$85
- DTC 3280A SCSI \$135
- MFM 1:1 16 Bit \$45
- IDE I/O (2S/P/G) \$25
- AT I/O (2S/P) \$12
- IDE Card \$14

MOTHERBOARDS

- 486-50 MHz EISA \$895
- 486-33 MHz VESA \$545
- 486-50 MHz ISA \$395
- 486-33 MHz ISA \$495
- 486-25SX \$265
- 386-40 MHz ISA \$185
- 386-33 MHz ISA \$175
- 386-25SX \$105

ACCESSORIES

- Logitech Mouseman (Serial) \$65
- Logitech Mouseman (Bus) \$69
- Logitech Trackman (Serial/PS2) \$85
- Impression Mouse \$15
- MS-DOS V5.0 \$45
- Microsoft Windows V3.1 \$45

MODEM

- Zortix 2400 \$42
- Zortix Fax Modem 2400/9600 \$75
- Zortix 9600 BPS \$195
- Zortix 9600/14400 Fax/Modem \$225

AND MUCH MORE . . .

CALL FOR BEST PRICES
DEALER INQUIRIES WELCOME

**44061 So. Grimmer Blvd.
Fremont, CA 94538**

PC/XT/AT are registered trademarks of
International Business Machines Corp.
Prices subject to change w/o notice. Not
responsible for typographic errors.

Probably the best way to see what AutoStat can do is by looking at a specific example in some detail. In one provided as a demo, the objectives of the statistical model are based on the options connected with purchasing new vehicles to increase the throughput of the modeled production process. The questions addressed are whether vehicles should be bought at all, if so, how many, and with what performance features.

To answer these three questions, a total of eight responses are defined. Five of them measure results on each of the five processing stations in the production setup. Another records the average of the five. Two additional response parameters record the number of parts processed every hour, and the average time that all the parts are in the system.

A total of four factors are used in the example. They register the number of vehicles in the loop, the vehicles' acceleration, their maximum speed, and the process plan description. After responses and factors are defined in AutoStat, you create a configuration file that sets values for various factors. In this example, since there is a need to experiment with different numbers of vehicles, the factor for the vehicle number is set as a variable factor so that separate runs can be made with different values.

The example first collects samples for the cases of five to twenty vehicles, incrementing each sample by a single vehicle. It finds that the optimum number to use is nine vehicles. Although the best performance is achieved with eleven vehicles, since it is not significantly better than with nine, the lesser number is used. Then, using the optimal number of vehicles, the results of using a new tooling operation are examined.

CONCLUSIONS

AutoMod is one of the first examples of a new type of hybrid application that seems destined to have a bright and exciting future. As is often the case, the first example of something new does not always have all the rough edges removed. AutoMod represents a remarkable achievement in its current state; however, some users will want still greater integration and interactivity. Also, it's not necessarily suitable for all needs. There is no built-in capability for handling continuous processes involving tanks and fluids, for example.

AutoMod is being used in industry by companies like Boeing, where it is seeing some extensive use designing the factory that will produce the new 777 jet. It is also in use at a university center for virtual reality research. Given its cost, which is still a bit beyond what most desktop users can afford, it is like an advance preview of what computing will be like for increasing numbers of mainstream users of the next couple of years. ■

BEST MEMORY PRICES • HIGHER QUALITY • SAME DAY SHIPPING • FREE REPLACEMENT WARRANTY

SIMM'S	
1x9-10 3 Chip/9 Chip	\$28/30
1x9-80 3/9 Chip	34/35
1x9-70	35/36
1x9-60	36/37
1x8-80 8 Chip	29
1x8-70	30
1x8-60	32
4x9-60	138
4x9-70	129
4x9-80	125
4x8-70 8 Chip	112
4x8-80 8 Chip	109
256x9-80	10
256x9-70	12

DRAM'S	
1x1-80	\$3.90
1x1-70	3.90
1x1-60	4.90
256x4-80	4.90
256x4-70	4.90
256x4-60	4.90
256x1-15-12-10	1.50
256-70	1.75
4464-80	1.65
4464-10	1.50

CPU CHIPS	
80386DX-	
16/20/25/33	\$39/49/79/89
80486DX2-50/66	418/560
80486DX-25/33	290/325
80486SX20/25	120/180
80386DX40	86
386DX40 w/Socket	79
80286-8/10 (PLCC)	8/10
80286-12/16 (PLCC)	6/10
V-30-10	CALL

SPECIAL MATH CO-PROC

INTEL 80387DX-20	\$30
------------------	------

MATH CO-PROCESSOR

INTEL

8087-5 MHz	\$20
8087-2 8 MHz	49
8087-1 10 MHz	89
80287-6 6 MHz	20
80287-8 8 MHz	25
80287XL 12 MHz (Laptop)	69
80287-10 10 MHz	35
80C287-12 MHz	35
80387SX-16	29
80387SX-20	75
80387DX-20 (Tube)	30
80387DX-25	69
80387DX-33	80

WEITEK

3167-20 20 MHz	\$29
3167-25 25 MHz	145
3167-33 33 MHz	325
4167-25 MHz	350
4167-33 MHz	585

CYRIX

83D87-40 40 MHz	\$85
83D87-20 20 MHz	69
83D87-25 25 MHz	69
83D87-33 33 MHz	75
83SX87-16 16 MHz	69
83SX87-25 25 MHz	69

IIT

8C387-8	\$39
8C287-10	39
8C287-12	49
287-20	49
8C387-20	79
8C387-25	69
8C387-33	69
8C387DX-40	82
80486SX-20	399
80486SX-25	515
80487SX	399

ULSI

US 83C87 16/20 MHz SX	\$59
US 83C87 20/25 MHz SX	69
US 83C87 25 MHz	69
US 83C87 33 MHz	69

EPROMS

2764-200ns	\$2.5
27C64-200ns	3.50
27128-200ns	3.50
27128-150ns	5.00
27256-200ns	3.50
27C256-200ns	3.75
27C512-200ns	6.00
27C020-150ns	13.00

1x4 4x1 STATIC

514402-80 (1x4) STT, ZIPP	\$18
514400-80 (1x4) ZIPP	17
514400-80 (1x4) DIPP	19
514400-80 (1x4) SOJ	14
514100-80 (4x1) SOJ	14

COMPAQ MEMORY	
DeskPro 386/20e, 20, 35e, 25 286e	
1 MB Module	\$175
4 MB Module	165
DeskPro 386/20e, 25e	
1-9 MB Exp Brd	140
4-12 MB Exp Brd	269
DeskPro 386s-16	
1 MB Module	89
4 MB Module	179
1-9 MB Exp Brd	159
4-12 MB Exp Brd	240
DeskPro 286N, 386N, 386SX/20	
2 MB Module	75
4 MB Module	175
DeskPro 386N, 386SX/20	
2 MB Module	118
DeskPro 286N, 386N	
0-4 MB Exp Board	175
DeskPro 386/33SL, 486/25, 486/33L System Pro	
2 MB Module	139
8 MB Module	239
32 MB Module	1700
DeskPro 386/16	
1 MB Kit	89
1 MB Exp Brd	229
2 MB Exp Brd	329
4 MB Kit	CALL
4 MB Exp Brd	425
8 MB Exp Brd	725
Portable 386	
1 MB Kit	189
4 MB Exp Brd	319
4 MB Exp Brd	322
Portable LTE (8086)	
512K Module	CALL
Portable LTE/286	
1 MB Module	89
2 MB Module	149
4 MB Module	425
Portable SLT/286	
1 MB Module	169
4 MB Module	349
Portable SLT/386	
1 MB Module	169
2 MB Module	189
4 MB Module	310
Portable III	
512K Kit	55
2 MB Kit	139

IBM PS/2 MEMORY

Mdl 30/386, Exp Brd	
512K Kit	\$54
2 MB Kit	89
Mdl 70-061; 121; 55SX; 65SX; Exp Brd	
1 MB Module	69
Mdls 70-061; E61; 121; 50Z, 55LS, 55SX; 65SX; P70:	
2 MB Module	85
Mdls 70-A21; A61, B21, B61	
2 MB Module	99
Mdls 55SX; 65SX; 55LS, 65LS	
4 MB Module	159
Mdls 80-111; 121, 311, 321	
2 MB Card	99
Mdls 80-A21; A31	
4 MB Card	215
Mdls 80-A21; A31	
4 MB Card	215
Mdls 90; 95	
2 MB Module	159
4 MB Module	259
Mdls 50 & 60	
2-8 MB Exp Brd.	275
Mdls 70 & 80	
2-8 MB Exp Brd	325
2-14 MB Exp Brd	450
4-16 MB Exp Brd	475
Adapter	
2 MB Module	CALL
PS/1 Home System	
512K Upgrade	CALL
2 MB Upgrade	CALL

TOSHIBA PORTABLE MEMORY

T1200XE	2 MB Card	\$89
T1600	2 MB Card	95
T3100SX	2 MB Card	85
	4 MB Card	175
T3100e	512K Card	CALL
	2 MB Card	85
T3200SX	2 MB Card	89
	4 MB Card	CALL
T3200	3 MB Card	175
T1000SE; XE	1 MB Card	89
T5100	2 MB Card	99
T5200; 8500	2 MB Card	110

1x4 70ns DIPP	\$19.00
256x4 10/80/70	\$10.50
Video Zippis	

CACHE MEMORY	
32x8-25	\$6.50
32x8-20	7.50
32x8-15	9.00
32x8-12	CALL
64x4-25	8.50
64x4-20	9.00
64x4-15	12.00
64x1-20	6.75
64x1-15	7.75
8x8-20	\$4.75
8x8-25	4.25
8x8-15	4.99
16x4-25	7.25
16x4-20	4.75
16x4-15	5.25
128x8-25	32.50
128x8-20	CALL
128x8-15	CALL

72 Pin SIMMS	
2 MB 604-80ns	\$79
4MB 1x36-80ns	149
8MB 2x36-80ns	269
16MB 4x36-70	620

MOTHERBOARDS	
486DX-50 w/256K Cache W/CPU	\$675
486DX-33 w/256K Cache W/CPU	469
486DX-33 w/128K Cache W/O CPU	135
386DX-40 w/64K Cache W/CPU	179
386DX-33 w/64K Cache W/CPU	159
386SX-33 W/CPU	125
386SX-25 W/CPU	99
386SX-16 W/CPU	75

HARD DRIVES	
40 MB Conner IDE	\$155
40 MB Seagate IDE	150
80 MB W. Digital IDE	210
120 MB Conner IDE	260
170 MB Conner IDE	299
130 MB Maxtor IDE	279
213 MB Maxtor IDE	369
210 MB W. Digital IDE	329
520 MB Fujitsu IDE	925

FLOPPY DRIVES	
1.2 MB Teac 5.25"	\$55
1.2 MB Samsung 5.25"	49
1.44 MB Teac 3.5"	49

ADD-ON CARDS	
IDE 2FD/2HD	\$12
IDE w/I/O	19
IDE 8-Bit Floppy Cont	15
IDE 8-Bit Hard Cont	19
1542BK Adaptec SCSI	259
DTC SCSI w/FD & w/HD	145
DTC ESDI w/FD & HD	160
DTC 8-Bit SCSI w/FD/HD	105
IDE Caching Exp to 4MB OK	180

VIDEO CARDS	
Trident w/256K VGA	\$30
Trident w/512K SVGA	39
Trident w/1 MB SVGA	69
Oak w/1 MB SVGA	65
Tseng Lab ET4000 w/1 MB SVGA	99
Orchid Pro IIS w/1 MB	125
Orchid Fahrenheit w/1 MB	245
Diamond Stealth w/1 MB	225

MONITORS	
14" VGA .41mm 640x480	\$210
14" SVGA .28mm 1024x768	259
14" SVGA .28mm Samsung	259
14" NI SVGA .28mm 1024x768	299
Viewsonic 4E/5E/6E/7	295/399/345/1099
NEC 3FG/4FG/5FG/6FG	659/749/1389/2350

MEMORY EXPANSION BOARDS	
Rampat for AT	\$95
Rampat Plus XT/AT exp to 16MB	125
Simply Ram for PS/2-16	149
mod. 50, 50Z, 60, 65 or 16-Bit MCA	
Simply Ram for PS/2-32	169
mod. 70, 80, 90 or any 32-Bit MCA	

CASES	
Baby AT w/230W PS	\$65
Mini Tower w/230W PS	65
Mid Tower w/230W PS	85
Full Tower w/230W PS	99

FAX/MODEM	
2400bps Internal w/MNP5	\$39
96/240bps Internal w/MNP5 w/Window	65
9600bps Internal w/MNP5	225
96/960bps Internal Fax/Modem V.32&V.42 Bis	199
96/144bps Int Fax/Modem V.32 & V.42 Bis	225
57,600 bps Throughput	
External/Pocket Fax Modem	CALL

ACCESSORIES	
Serial Mouse 3-button	\$15
Hand Scanner 256K Gray Scale	299
Flat Bed Scanner	CALL
Sound Blaster Pro w/MIDI	189
Printer Cable 6' Parol	4
Printer Cable 10' Parol	6
Switch Box (A/B) for printer	9
Switch Box (A/B/C/D) for printer	22
Diskettes HD 5.25/3.5	38¢/59¢ 500+

C.B.
Memory & Computers
1319 Jacklin Rd. • Milpitas, CA 95035
TEL: (408) 946-5174 or 946-5175
Fax: (408) 946-5376

ROCK BOTTOM PRICES!

Manufacturer Direct Engineering Excellence!!
5 Year Labor, 1 Year Parts Warranty

MODEL	MB+ CPU	BASIC SYSTEM	BASIC SYS +40MB HDD +MGP CARD & MONO MONITOR	BASIC SYS +80MB HDD +SVGA CARD & SVGA MONITOR	BASIC SYS w/1.2 & 1.44 FDD +120MB HDD +SVGA CARD & SVGA MON	BASIC SYS w/1.2 & 1.44 FDD +200MB HDD +SVGA CARD & SVGA MON
486DX2-66 EISA W/64K	\$796	\$966	\$1191	\$1438	\$1545	\$1653
486-50 EISA W/64K	720	885	1110	1356	1457	1570
486-33 EISA W/64K	546	720	945	1185	1290	1398
486DX2-66 ISA W/64K	672	840	1065	1305	1402	1515
486-50 ISA W/64K	580	740	970	1210	1307	1420
486-33 ISA W/64K	296	459	681	921	1018	1131
486SX-25	205	370	595	835	932	1045
386-40 W/64K	155	315	540	780	877	990
386-33 W/64K	152	312	537	777	874	987
386-25DX	130	290	515	755	852	965
386SX-40	106	276	501	741	838	951
386SX-33	93	256	481	721	818	931
386SX-25	85	250	475	715	812	925
286-20	62	222	447	687	784	897

SYSTEM UPGRADES

VIDEO CARDS & MONITORS

ATI Ultra Pro VESA Local Bus w/2MB, 33MHz Only ..	\$425
ATI Ultra Pro w/2MB 1280x1024, Win. Accel ..	420
ATI Ultra Plus w/2MB 1280x1024, Win. Accel ..	315
ATI Ultra w/1MB w/Mouse 1280x1024, Win. Accel ..	250
Diamond Stealth w/1MB 1280x1024 VESA Local Bus, Accel.	160
Diamond Speed 24X 1MB Hi Color ..	160
ORCHID ProDesigner IIS (EISA) w/1MB Hi-Color ..	155
ORCHID 801 w/1MB 1280x1024 ..	135
ORCHID 801-VA 1280x1024 w/1MB ..	170
TSENG Lab VGA w/1MB ..	77
AVGA III w/1MB Windows Accelerator ..	77
SOCOS Monitor 15", 1280x1024, .28 ..	420
NEC 3FGX 15", 1024x768, .28 ..	625
NEC 4FG 15", 1024x768, .28 ..	735
NEC 5FG 17", 1024x768, .28 ..	1335
NEC 6FG 21", 1280x1024, .28 ..	2320
ARCH 17" 1280x1024, .28 ..	789
VIEWSONIC 4E/5E/5+ ..	285/385/485
VIEWSONIC 6E/6FS/7/8 ..	325/560/960/1515

CONTROLLER

IDE 2FD/2HD ..	\$12
IDE 2FD/2HD with 2S/1P/1G ..	16
Ultrastor SCSI 14F (ISA) ..	225
Ultrastor ESDI w/32K Cache (ISA) ..	154
Ultrastor SCSI 24F (EISA) ..	415
Adaptec SCSI 1542Bk w/Kit (ISA) ..	236
VESA Local Bus Controller 2FD/2HD with 2S/1P/1G ..	89

HARD DRIVES

80MB 18ms IDE ..	\$185
100MB 18ms IDE ..	220
120MB 16ms IDE ..	235
170MB 16ms IDE ..	265
200MB 16ms IDE ..	335
340MB 15ms IDE ..	530
540MB 12ms IDE/SCSI ..	860

CASES

Tower Case full size, 6 drives, 250wps ..	\$105
Tower Case medium size, 6 drives, 200wps ..	85
Tower Case mini size, 5 drive, 2000wps ..	60

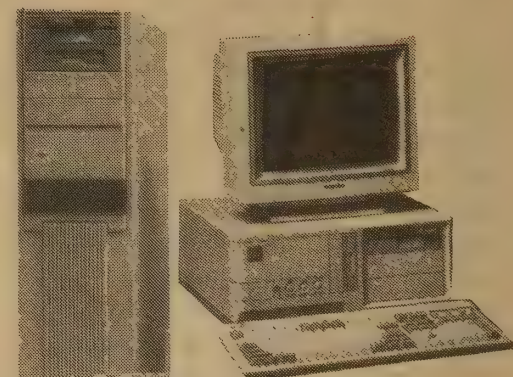
MISCELLANEOUS

AT I/O (2S/1P/1G) ..	\$11
Serial Card/Parallel Card/Game Card ..	11
Fax Modem (9600 Fax, 2400 Modem) ..	55
Fax Modem (14,400 Fax, 14,400 Modem) ..	195
True 16-Bit Stereo Sound Card ..	CALL
2400 Int. Modem ..	34
Serial Mouse ..	13
Window 3.1 ..	38

DOS 5.0 ..	\$38
Power Center ..	14
Colorado Backup 120/250MB ..	180/235
SONY CD ROM CDU31A/541 ..	280/415
CYRIX 387 DX-33/40 ..	70/90
CYRIX 387 SX-25/33 ..	70/76
INTEL 387 DX-25/33 ..	65/72
16-Bit Ethernet Card 10 Base-T ..	69
SIMM/CPU/SRAM/DRAM ..	LOWEST

Government, Corporate, University, & VAR Inquiries and PO's Welcome

Prices subject to change without notice. Not responsible for typographical errors.



FCC Class B Approved

BASIC SYSTEMS INCLUDE:

- Baby case & power supply
- Motherboard & CPU
- 1MB RAM installed
- 1.2MB or 1.44MB Floppy Drive
- 1:1 2HD/FD Controller
- Internal Clock/Calendar
- Math Coprocessor socket
- 101 Enhanced Keyboard

VESA LOCAL BUS SYSTEM

486 VESA Local Bus Motherboard
 Genova VESA 32 Bit Local Bus Video Board
 + Basic System

486-50 w/256K Cache \$940

486-33 w/256K Cache \$790

MULTI MEDIA UPGRADE KIT

"Super Entertainment"

Includes

- Thunder Audio Card
- MPC CD ROM Drive
- FREE Speakers
- FREE CD with 8 Software titles:

ONLY \$499

- Microsoft Windows
- Microsoft Bookshelf
- Mother Goose
- King Quest V
- Wild Place
- Worldview
- Sound Library
- MPC Wizard

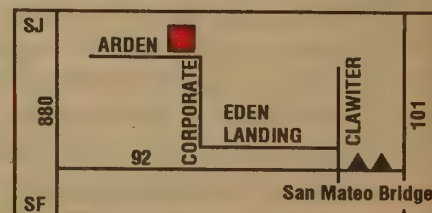


MCTechnology

3518 Arden Road
 Hayward, CA 94545

(510) 670-0636

FAX (510) 670-0790
 Hours M-F 9-6 SAT 10-4
 Pacific Time



PRODUCT SPOTLIGHT

Continued from page 198

of line, scatter, pie, bar, and column charts are provided, as well as three-dimensional versions when appropriate.

IFF images can be used as backdrops, chart columns, and line points. When used in columns, the image is stacked to represent the column. Images as well as text can be layered on the charts as movable objects. All standard Amiga bit-mapped fonts are supported. Line, box, and arrow draw capabilities are also available.

Charts can be saved as C&G chart files for future editing or as IFF images. Output is generally limited to the Amiga display resolution; however, PostScript is also supported for higher-quality output.

C&G uses a straightforward and logical approach which makes the program very easy to use. The thick user manual includes a lengthy tutorial, but it is also very easy to just jump right in. (TRSL, PO Box 94263, Las Vegas, NV 89193-4263)

PRESENTATION MASTER

Published By: Oxxi, Inc.

List Price: \$299.95

Reviewed By: Douglas J. Nakahihara

Using a slide metaphor, Presentation Master

(PM) allows you to graphically create your presentation. A multitude of wipes are provided to transition from slide to slide. Hot spots can also be added to interactively link to "child" slides. A slide can be an IFF picture or animation, or it can contain any combination of text, bit-mapped graphics, and Encapsulated PostScript (EPS) clips.

To facilitate the creation of slides and give your presentation a consistent look, Oxxi has provided several templates. These templates provide a good starting point—you can alter them or create new ones.

PM includes a full set of drawing, charting, and text manipulation tools. The structured drawing and EPS clip editing tools are extremely impressive. Charts are very easy to make using spreadsheet-like tables.

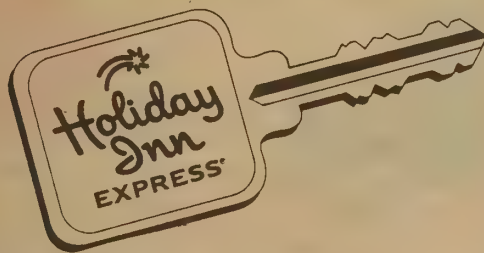
Presentations can be played using a freely distributable player program. Team this with an Amiga 600HD and you've got an inexpensive portable presentation system. Alternatively, you can create beautiful 24-bit color projector slides using PM's PostScript output capabilities. DMI's 24-bit Resolver display and 24-bit IFFs are also supported, but you must request the drivers from Oxxi.

A thick manual with a lengthy tutorial and online help are provided to guide new users through Presentation Master's steep learning curve. The only notable shortcoming is Presentation Master's lack of an AREXX port. (Oxxi, Inc., PO Box 90309, Long Beach, CA 90809. 310/427-1227) ■

• BEST MEMORY PRICES • HIGHER QUALITY
• SAME DAY SHIPPING • FREE REPLACEMENT WARRANTY

SIMM'S	COMPAQ MEMORY
1x9-10 \$30	DeskPro 386/20e, 20, 35e, 25 286e
1x9-80 34	1 MB Module CALL
1x9-70 35	4 MB Module CALL
1x9-60 35	DeskPro 386/20e, 25e
1x8-80 29	1-9 MB Exp Brd CALL
1x8-70 29	4-12 MB Exp Brd CALL
1x8-60 29 ⁵⁰	DeskPro 386s-16
4x9-60 135	1 MB Module CALL
4x9-70 129	4 MB Module CALL
4x9-80 120	1-9 MB Exp Brd CALL
4x8-70 114	4-12 MB Exp Brd CALL
4x8-80 109	DeskPro 286N, 386N, 386SX/20
256x9-80 10	2 MB Module CALL
256x9-70 13	4 MB Module CALL
	DeskPro 386N, 386SX/20
DRAM'S	2 MB Module CALL
1x1-80 \$3 ⁹⁰	DeskPro 286N, 386N
1x1-70 3 ⁹⁰	0-4 MB Exp Board CALL
1x1-60 4 ⁹⁰	DeskPro 386/33SL, 486/25, 486/33L
256x4-80 3 ⁹⁰	System Pro
256x4-70 3 ⁹⁰	2 MB Module CALL
256x4-60 3 ⁹⁰	8 MB Module CALL
256-70 1 ⁷⁵	32 MB Module CALL
256-60 1 ⁸⁵	DeskPro 386/16
4464-80 2 ⁰⁰	1 MB Kit CALL
4464-10 1 ⁵⁰	1 MB Exp Brd CALL
CPU CHIPS	2 MB Exp Brd CALL
80386DX-16/20/25/33 CALL	4 MB Kit CALL
80386SX-16/20 CALL	4 MB Exp Brd CALL
80486DX-25/33 CALL	8 MB Exp Brd CALL
80286-8/10 (PLCC) \$18/20	Portable 386
80286-12/16 (PLCC) 20	1 MB Kit CALL
82385-20 35	4 MB Exp Brd CALL
82385-33 49	4 MB Exp Brd CALL
V-20-8 6 ⁰⁰	4 MB Exp Brd CALL
V-20-10 10	Portable LTE (8086)
V-30-10 10	512K Module CALL
AMD	Portable LTE/286
80386 DX 40 CALL	1 MB Module CALL
MATH CO-PROCESSOR	2 MB Module CALL
INTEL	4 MB Module CALL
8087-5 MHz \$30	Portable SLT/286
8087-2 8 MHz 59	1 MB Module CALL
8087-1 10 MHz 59	4 MB Module CALL
80287-6 6 MHz 25	Portable SLT/386
80287-8 8 MHz 30	1 MB Module CALL
80287XL 12 MHz (Laptop) 69	2 MB Module CALL
80287-10 10 MHz 35	4 MB Module CALL
80C287-12 MHz 35	Portable III
80387SX-16 75	512K Kit CALL
80387SX-20 75	2 MB Kit CALL
80387DX-20 (Tube) 30	IBM PS/2 MEMORY
80387DX-25 80	Mdl 30/386, Exp Brd
80387DX-33 80	512K Kit CALL
WEITEK	2 MB Kit CALL
3167-20 20 MHz \$89	Mdl 70-061; -121; 55SX; 65SX: Exp Brd
3167-25 25 MHz 145	1 MB Module CALL
3167-33 33 MHz 325	Mdls 70-061; E61; 121; 50Z;
4167-25 MHz 350	55LS, 55SX; 65SX: P70:
4167-33 MHz 585	2 MB Module CALL
CYRIX	Mdls 70-A21; A61, B21, B61
83087-16 16 MHz \$69	2 MB Module CALL
83087-20 20 MHz 69	Mdls 55SX; 65SX; 55LS, 65LS
83087-25 25 MHz 69	4 MB Module CALL
83087-33 33 MHz 79	Mdls 80-111; 121, 311, 321
83SX87-16 16 MHz 79	2 MB Card CALL
83SX87-20 20 MHz 79	Mdls 80-A21; A31
IIT	4 MB Card CALL
8C87-8 \$39	Mdls 80-A21; A31
8C287-10 39	4 MB Card CALL
8C287-12 39	Mdls 90; 95
287-20 45	2 MB Module CALL
8C387-20 79	4 MB Module CALL
8C387-25 79	Mdls 50 & 60
8C387-33 79	2-8 MB Exp Brd CALL
AMD	Mdls 70 & 80
80C287-10 \$39	2-8 MB Exp Brd CALL
80C287-12 39	2-14 MB Exp Brd CALL
ULSI	4-16 MB Exp Brd CALL
US 83C87 16 MHz SX \$59	Adapter
US 83C87 20 MHz SX 69	2 MB Module CALL
US 83C87 25 MHz 70	PS/1 Home System
US 83C87 33 MHz 70	512K Upgrade CALL
EPROMS	2 MB Upgrade CALL
2764-200ns \$2 ⁷⁵	TOSHIBA PORTABLE MEMORY
27C64-200ns 3 ⁵⁰	T1200XE 2 MB Card ... CALL
27128-200ns 3 ⁰⁰	T1600 2 MB Card ... CALL
27128-150ns 5 ⁰⁰	T3100SX 2 MB Card ... CALL
27256-200ns 3 ⁵⁰	4 MB Card ... CALL
27C256-200ns 3 ⁷⁵	T3100e 512K Card ... CALL
27C512-200ns 6 ⁰⁰	2 MB Card ... CALL
27C020-150ns 13 ⁰⁰	T3200SX 2 MB Card ... CALL
1x4 4x1 STATIC	4 MB Card ... CALL
514402-80 (1x4) STT, ZIPP \$20	T3200 3 MB Card ... CALL
514400-80 (1x4) ZIPP 19	T1000SE; XE 1 MB Card ... CALL
514400-80 (1x4) DIPP 18	T5100 2 MB Card ... CALL
514400-80 (1x4) SOJ 15	T5200; 8500 2 MB Card ... CALL
514100-80 (4x1) SOJ 15	

ONE MILE FROM LOS ANGELES INTERNATIONAL AIRPORT



\$58*

*MICROTIMES SPECIAL

Our Latest Overnight Success

Located minutes from Business Centers, Aerospace Industries and Governmental Agencies, and right off the I-405 Freeway. You can enjoy the array of services offered:

- Courtesy Airport Transportation
- Free Breakfast Bar
- Free Local Area Calls
- Free Movie & News Channel
- Business Services
- Outdoor Pool
- Meeting Room (5-50 Persons)
- Area Restaurants Deliver Free
- Priority Club Benefits

Hotel Direct (310) 671-7213 or Fax (310) 671-1804

Toll Free (800) HOLIDAY ask for LAXAI

4922 W. CENTURY BLVD., INGLEWOOD, CA 90304

We Beat Hi-Tech Prices!!

UPGRADE YOUR 386 SYSTEM TO 486 PERFORMANCE WITHOUT BUYING A NEW MOTHERBOARD

"Get a Cymx 486 DLC CPU Now!"

486 PERFORMANCE

UNBEATABLE SPECIALS!

CYRIX 486 DLC CPU	\$110
CYRIX 486 DLC CPU + Motherboard & Math Chip	\$270
Maxtor 130MB Hard Drive	\$226
Maxtor 213MB Hard Drive	\$326
96/96/24 FAX/Modem (Made in USA)	\$47
14400/14400 FAX/Modem (Made in USA) 5 Year Warranty	\$174

MONTHLY SPECIALS!!!

2" Hard Disk Drive 80MB/120MB . Best	• Fahrenheit 1280 \$161
• Printers from \$45	• SVGA Monitor (1024x768) \$209
• ESDI Controller from \$39	• Adaptec 1522 SCSI Controller \$93
• PS2 50/60/70 system & mouse \$350	• 101 Japan Keyboard \$26
• Laptop, lynch portable computer from \$360	• 386DX-33 \$59
• SIMM 1MBX9 60ns/70ns from \$28	• 486DX VESA Motherboard \$150
• Quantum IDE/SCSI 52MB \$189	• Intel Rapid CAD Engineering Coprocessor Call
• SVGA Card + 1MB \$48	

Model	MB+CPU	Basic System	PACKAGE ADD-IN VALUE
486DX2-66 EISA	\$865	\$1035	40MB HD \$139
486DX-50/64K	590	780	85MB HD 189
486DX-33/64K	450	630	120MB HD (Conner) 205
486DX-33/64K	270	440	170MB HD 269
486SX-25/64K	220	395	340MB HD 495
386-33/64K	165	385	Big Drive Call
386SX-33	99	319	SVGA Monitor & Card 249
286-10/12	47	237	SMVGA w/Card 135

Basic Systems Include: Motherboard, CPU, 1MB RAM (512KB for 286 system), HD/FD Controller, 1.44MB Floppy Drive, Math Coprocessor Socket, Case, Power Supply & 101-Key Keyboard.

All systems come w/a FREE Modem installed. Buy 486DLC/386/286 Basic System, get a FREE Math-Coprocessor

Palo Alto Micro Corp.

3483 El Camino Real, 2nd Floor, Palo Alto, CA 94306

415/493-8209 • Fax 415/493-4572

1-800-472-8209

Prices Subject to Change w/o Notice

7 Years in Business with Quality Parts & Service

SCCI SANTA CLARA Computers International

1630 Oakland Rd. • Suite A111 • San Jose, CA 95131

TEL: (408) 441-6100 Fax: (408) 441-0153 • Hours: M-F 8:530

Custom Configuration Our Specialty

We Stand Behind Our Products

MICRONICS
COMPUTERS INC.

**486-33 VESA
LOCAL BUS
w/ATI ULTRA
PRO VESA BUS
240MB Hard Disk
Super VGA System**

- One Additional Available VESA LV Slot
- Built-in VESA Local Bus 2FD/2HD IDE Controller Card
- 8K Internal, 256K External Cache
- 4MB RAM expandable to 64MB onboard
- 240MB IDE Hard Drive Fast
- 14" Super VGA color Monitor (Non-Interlaced 1024x768) .28 dp
- ATI ULTRA PRO VESA Local Bus Mach 322 GUI (Windows) Accelerator SVGA Card w/1MB VRAM
- 1.2MB & 1.44MB Floppy Drive
- 101-Key Keyboard
- Full Tower Case w/300W power supply
- DOS 5.0 & Windows 3.1
- 3-Button High Resolution Mouse

\$2,495

486-50MHz System \$2,585
486-DX2 66MHz System \$2,759

Limited Quantity Special!
VESA LOCAL BUS 486DX/33MHz
Orchid Superboard VLB
240MB Super
VGA System

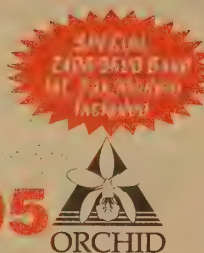


Fahrenheit™ VLB
Local Bus Display Card
Super Speed Windows!

- 8K Internal, 256K External cache
- 4MB RAM expandable to 32MB on board
- 240MB IDE Hard Drive Fast
- 14" Super VGA color monitor (Non-Interlaced 1024x768) .28 dp
- 1MB Local Bus Fahrenheit™ VLB display card
- 2HD/FD Local Bus VESA IDE Controller Card
- 2S, 1P, 1G ports
- 1.2MB and 1.44MB floppy drives
- 101-key keyboard
- Built-in math coprocessor
- Clock/calendar w/battery backup
- Vertical case with power supply
- MS DOS 5.0 & Windows 3.1
- 3 Button High-Resolution Mouse

\$2,095

**486DX-50MHz
w/256K Cache System \$2,329**



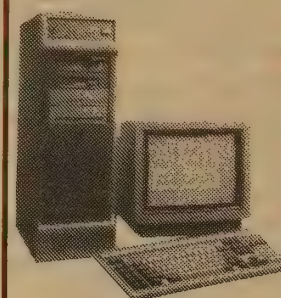
ECI 486DX2/66MHz
256K Cache

ISA \$2,039

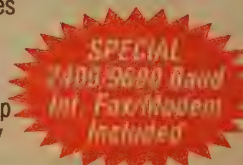
ECI 486DX/50MHz
256K Cache

ISA \$1,929

213MB Super VGA System



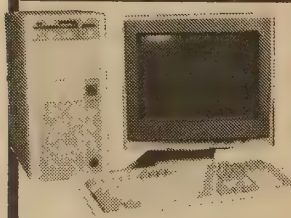
- 8K Internal, 256K external cache
- 4MB RAM expandable to 128MB on board
- 213MB IDE HARD DRIVE
- 14" Super VGA color monitor (Non-Interlaced 1024x768) .28 dp
- 1MB 16bit VGA (1024x768) card
- 2HD/FD controller w/2S, 1P, 1G ports
- 1.2MB and 1.44MB floppy drives
- 101 Enhanced keyboard
- Built-in math coprocessor
- Weitek coprocessor socket
- Clock/calendar w/battery backup
- Vertical case with power supply
- MS DOS 5.0 & Windows 3.1
- 3 Button High-Resolution Mouse



OPTIONS:

-340MB 14ms Hard Disk ADD \$289
-17" Viewsonic 7 Monitor 1280x1024 .28dp ADD \$699

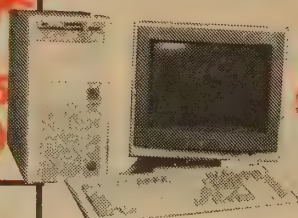
ECI 386SX-25
85MB Super
VGA System
\$899



- 2MB RAM expandable to 16MB
- 85MB Hard Drive
- 14" Super VGA Color Monitor (1024x768) .28dp
- 512K 16bit VGA (1024x768) Card
- Math Coprocessor Socket
- 1.2MB and 1.44MB Floppy Drive
- 2HD/FD controller w/2S, 1P, 1G ports
- 101 Enhanced Keyboard
- Mini Vertical Case with 200W power supply
- 3 Button High-Resolution mouse
- MS DOS 5.0

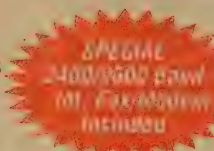
OPTIONS

-120MB 17ms Hard Disk ADD \$89
-200MB 15ms Hard Disk ADD \$195
-RAM Upgrade ADD \$35 per MB



ECI 386/40MHz
64K Cache 120MB
Super VGA System
\$1,165

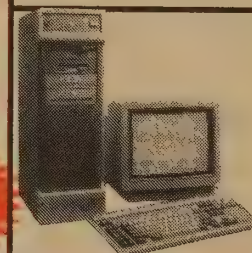
- 64K cache on board
- 4MB RAM expandable to 32MB on board
- 120MB IDE HARD DRIVE
- 14" Super VGA color monitor (1024x768) .28dp
- 1MB 16bit VGA (1024x768) card
- 2HD/FD controller
- 1.2MB and 1.44MB floppy drive
- 2 Serial, 1 Parallel, 1 Game Ports
- 101 Enhanced keyboard
- Weitek coprocessor socket
- Clock/calendar w/battery backup
- Includes shadow ram for fast bios access
- Mini Vertical case with 200W power supply
- 3 Button High-Resolution mouse
- MS DOS 5.0



5 YEAR LABOR 1 YEAR
PARTS WARRANTY ON
ALL SYSTEMS

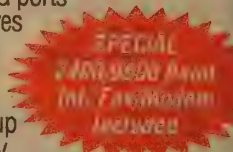
Complete Computer
Repair Service and
System Upgrading.

Our Service Staff is trained to handle
all jobs, large or small. We repair all
makes and models.



486DX-33 MHz 128K Cache
213MB Super VGA Monitor

- 8K Internal, 128K external cache
- 4MB RAM expandable to 128MB onboard
- 213MB IDE HARD DRIVE
- 14" Super VGA color Monitor (Non-Interlaced 1024x768) .28 dp
- 1MB 16bit VGA (1024x768) card
- 2HD/FD controller w/2S, 1P, 1G ports
- 1.2MB and 1.44MB floppy drives
- 101 Enhanced keyboard
- Built-in math coprocessor
- Weitek coprocessor socket
- Clock/calendar w/battery backup
- Vertical case with power supply
- MS DOS 5.0, & MS Windows 3.1
- 3 Button High-Resolution Mouse

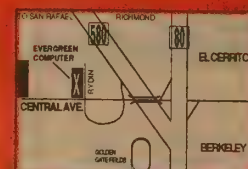


\$1,695

COMPUTER INTERNATIONAL, INC.
2700 Redlin Road #C Richmond, CA 94804

EVERGREEN

(510) 526-8667 FAX (510) 526-1447



Serving You for Over 8 Years!

Hard Disks • MultiMedia • Monitors

MAXTOR

80MB 18ms IDE 7080A	\$230
130MB 15ms IDE 7120A	260
213MB 15ms IDE 7213A	369
340MB 13ms IDE LVT-340	589
535MB 13ms SCSI/IDE LXT-535A	889/929
768MB 16ms SCSI XT-8760	1149
1.2GB SCSI	1555
1.7GB SCSI	1995

FUJITSU

525MB SCSI 12ms	\$919
1.2GB SCSI 14ms	1379

CONNER

170MB 17ms IDE CP30174E	\$285
120MB 19ms IDE 30104	269
213MB 12ms IDE CP30204F	369

WESTERN DIGITAL

85MB 17ms IDE	\$215
120MB 19ms IDE	260
213MB 15ms IDE	349

QUANTUM

122MB 256K Cache 9ms IDE	\$269
240MB 256K Cache 9ms IDE	379
105MB 17ms IDE	295

INTERFACE CARDS

AT I/O card 2S/1P/G	\$16
Mono graphic/printer	19
XT high density floppy cont	35
XT hard disk cont	49
Serial/printer/game card	16/16/16
MFM 1:1 HD/FD cont	49
IDE dual HD/FD cont	19
IDE w/IO 2S, 1P, 1G, Card	29
SCSI 1:1 HD/FD cont	159
VGA Trident 1024x768 w/1MB	85
VGA T9000 1024x768 512K	69

FotoMan™ \$499



Digital Camera for DOS Systems
Fast and Easy to Operate! Perfect for all your DTP needs!
• Take up to 32 pictures from 3 ft. to infinity
• Enhance photos w/FotoTouch™ Image Editing
• Save images in TIFF, ESP, PCX, & BMP Format
• Built-in auto flash for great indoor picture

LOGITECH SCANNERS



ScanMan Model 256 & Ansel™ Hand-Held Scanner

• Serial Mouseman 400dpi	\$69
• Bus Mouseman 400dpi	69
• Cordless Mouseman 400dpi	109
• Serial TRACKMAN NEW	89
• Bus TRACKMAN 320dpi	79
• First Mouse	39

ScanMan 32	\$139
ScanMan 256	\$259
ScanMan Hand-Held	\$319

Color Scanner \$559

HOURLY - MON-FRI 9-5 SAT 10-5
Phone orders to (510) 526-8667
are subject to 10% handling charge.
Prices listed in this price list.



SOUND BLASTER

MULTIMEDIA UPGRADE KIT

Kit includes the new matching CD ROM player and Sound Blaster Pro with midi kit and all the following software:

- MS Windows
- MS Bookshelf
- World Atlas
- AM Heritage Dictionary
- Almanac/Thesaurus
- MS Word for Windows
- Mathematica
- US Atlas/Automap
- Macromind Action
- Sherlock Holmes

Internal \$529

External \$619



CREATIVE
CREATIVE LABS, INC

SOUND BLASTER

Digitized voice input/output
Decompression hardware

SOUND BLASTER PRO BASIC \$159

SOUND BLASTER PRO \$189
CD-Quality stereo sound
CD-ROM interface

XIRCOM \$239

Pocket Ethernet Adapter



FUSION 16

INCLUDES: Pro Audio 16
Internal CD ROM Labtec Speakers
Comptons Family Encyclopedia
Wing Commander II With Speech
PAK • Ultima Underworld • Where in the World is Carmen San Diego Deluxe Edition



\$529

Future Domain

SCSI DNK Kits \$275
TMC-1680 DNK

16-Bit AT SCSI-2 Fast SCSI adapter with (4) floppy support
Complete with Software & Documentation
Comes with all software drivers
• MS-DOS Extension & SCSI Disk Set-up Utility w/Manual
• CD-ROM Driver with MS-DOS Extensions w/Manual
• Novell Network 286-386 Driver w/Manual
• OS/2 Driver w/Manual • SCO, XENIX Disk & Tape Driver w/Manual

VIDEO BOARDS

ATI

ATI Ultra w/1MB & Mouse
1280x1024, Hi-Color \$285

ATI Ultra w/1 or 2MB & Mouse
1024x768, 65,000 Colors CALL

DIAMOND

Stealth™ 24 \$199

Stealth™ 24 VLB 210

SpeedStar 24X 24-bit True w/1MB Color 189

ORCHID TECHNOLOGY

Fahrenheit 1280 1280x1024 w/1MB \$210

ProDesigner IIs 1024x768 w/1MB 119

ViewSonic™ MONITORS



14" 1	640x480 .39mm	\$235
14" 5E	Non-Interlaced .28mm	435
14" 6E	Non-Interlaced .28mm	549
17" /	1280x1024 .28mm	1029
20" 8	1280x1024 .31mm	1699

MAG INNOVISION®



MV1448	14" 1024x768 .28 Non-Interlaced	\$459
MX14H	14" 1280x1024 .28 Non-Interlaced	\$600
MX15F	15" 1280x1024 .28 NI FST	699
MX17F	17" 1280x1024 .26 NI FST	1399

NEC MONITORS Logo



15"	3FGX	1024x768	28mm	\$655
15"	4FG	1024x768	28mm	759
17"	5FG	1280x1024	28mm	1399
21"	6FG	1280x1024	28mm	2899

SONY®



14"	1304S	1024x768	25mm	\$579
17"	CPD-1604S	1024x768	25mm	999
20"	GDM1936	1280x1024	20mm	2499

STANDARD TECHNOLOGIES



Local Bus Monitors

17" .31dp Color VESA Maximum Resolution	
1024x768 Non-Interlaced #731-VESA	\$695
14" .28dp Color VESA Maximum Resolution	
1024x768 Non-Interlaced #428-VESA	\$669

Super VGA Monitors

14" .28dp Color UVGA Maximum Resolution	
1024x768 Non-Interlaced #428-UVGA	\$329
14" .28dp Color SVGA Maximum Resolution	
1024x768 Interlaced #428-SVGA	\$289
14" .39dp Color SVGA Maximum Resolution	
1024x768 Interlaced #439-SVGA	\$248

Monochrome Monitors

14" .39dp Flat Screen Monochrome Maximum Resolution	
1024x768 Interlaced #400-MVGA	\$149
9" Flat Screen Monochrome VGA Maximum Resolution	
1024x768 Interlaced #090-MVGA	\$149

CENTRAL POINT PC TOOLS

Essential Utilities for the PC Professional

\$89

VERSION 7.1
The Perfect Companion
for DOS 5 & Windows

EVERGREEN COMPUTERS INT. (510) 526-8667

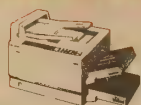
**GREAT SERVICE
GREAT PRICES**

1000's of High Quality Products!

PRINTERS

Panasonic

**KX-P4455
PostScript Laser**



- 2MB RAM exp to 4MB
- Two 250 sheet paper trays
- 39 PostScript fonts • 11PPM

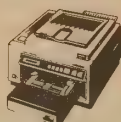
\$1749

Accessories for
4455/4450i
Legal Tray \$69
Envelope Tray 69
Toner 39
Drum Unit 149
Developer 119

KX-P4450i \$1095

KX-P4430

Laser Printer



**NEW!
\$888**

- 1MB RAM exp to 5MB
- PCL-5 Scalable
- 300 dpi resolution • 5PPM
- 200 sheet paper capacity

KX-P4410

Laser Printer



\$629

5ppm!

- 512K RAM exp. to 4.5MB
- 200 sheet paper capacity
- 300 dpi resolution • 5PPM

Panasonic Toner Cartridges

KX-P450	KX-P4450	.....	\$39
KX-P451	KX-P4420	.....	39
KX-P453	KX-P4410	KX-P4430.....	39

KX-P2123

**Quiet 24-pin
Color Capable
43.5 dBA!**

\$235

KX-P2180

**Quiet 9-pin
Color Capable
45 dBA**

\$165

Color Option.....\$49

KX-P2624	24-pin, 300cps, Free ATM	.....	\$369
KX-P1624	24-pin, 192cps, Wide Carriage	.....	339
KX-P1124i	24-pin, 300cps, 100cps LQ	.....	279
KX-P2124	NEW	.....	319

American Power Conversion



**READER'S
CHOICE**

**RESIDENT'S
CHOICE**

**RESIDENT'S
CHOICE**

**RESIDENT'S
CHOICE**

**RESIDENT'S
CHOICE**

**RESIDENT'S
CHOICE**

**RESIDENT'S
CHOICE**

**RESIDENT'S
CHOICE**

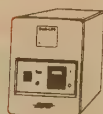
**RESIDENT'S
CHOICE**

**RESIDENT'S
CHOICE**

Backup Power Supplies at Great Prices!

BK250B 200-200VA; back-up power for 386SX, 286SX, 286, XT's and AT's **\$109**

BK450 400-450VA; back-up power for Tower 386, 486 systems, servers; with network interface **\$209**



BK600 Back-up power for heavily configured 386, 486 systems; CAD/CAM **\$279**

Call for other models!

ARTISOFT

**LANtastic
NETWORKING**

AE-2 Starter Kit	.....	\$485	AE-2 Ethernet Adapter	.....	\$199
AE-3 Starter Kit	.....	565	AE-3 Ethernet Adapter	.....	235
2Mbps Starter Kit	.....	355	2Mbps Adapter	.....	145
10 Base T Starter Kit	.....	595	AE-2/T 16 Bit 10BT	.....	210
			AE-1/T 8 Bit 10BT	.....	135

NEC

LC-95 Printer

\$1,389

- Adobe PostScript & HP II Emulation
- 6 PPM Laser Printer
- 300 dpi
- Apple Talk, Parallel and Serial Interface
- 2MB of Memory
- 35 Scalable Typefaces, 14HP Bitmapped Fonts
- Universal Paper Tray

Toner Cartridges

#20-055LL Silentwriter 2 Model 90/95 **\$189**

NEC P6200

24 PIN, 300 cps, auto paper load
20k buffer, 80 columns

NEC P6300

Wide carriage version of P6200

\$429

\$629

CITIZEN PRINTERS

GSX-230

- 24-pin printer
- Up to 270cps, 90cps LQ
- 8 Built-in fonts

\$249

GSX-145

- 132 column printer
- Color Option Only \$69

\$359

GSX-240

- 24-pin printer
- Up to 300cps, 99cps LQ
- 13 Built-in fonts, including 2 scalable

\$299

Laser Printer MEMORY!!

	1MB	2MB	3MB	4MB
HPII/II	N/A	\$125	\$160	\$180
HPII/II/III/III	N/A	125	160	180
Panasonic KX-P4420	N/A	139	175	189
IBM 4019	109	149	309	N/A
Epson EPL-6000	140	155	190	N/A
Epson EPL-7000	N/A	90	140	N/A
Okidata 400/800	100	150	N/A	N/A
Brother HL-4	130	180	230	280

DIGITIZERS

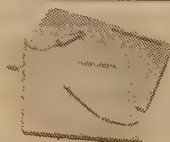
Summagraphics

Summasketch III NEW
12"x12" 4 Button Cursor

\$329

Summasketch II
12"x18" Pro, 4 Button Cursor

\$489



**Free Trivial Pursuit® Daily Planner with
Purchase of Microsoft Mouse or Microsoft
BallPoint Mouse**



- PS/2 Only Mouse \$79
- Serial Only Mouse 79
- PS/2 Only BallPoint 99

FELLOWES

Anti-Glare Filter

Optical quality nylon mesh anti-glare filter for 14/15" monitors.

PANAMAX

POWER PROTECTION

**Six (6) Outlet Surge
Suppressor**

6 foot power cord, master on/off switch, resettable circuit breaker



\$49

\$69

PRINTERS

**HEWLETT
PACKARD**
Authorized Dealer

LaserJet 4 w/Toner

8ppm; 600x600 dpi, 2MB

\$1449

LaserJet 3Si w/Toner

7ppm, Network Compatible, 1MB

3399

LaserJet 3D w/Toner

8ppm, Duplex printing, 1MB

2295

LaserJet 3P w/Toner

4ppm, 1MB

999

LaserJet 2P Plus w/Toner

4ppm, 512K

799

DeskJet 550C

300dpi, Color Ink Jet, 1 Color/1Black Cartridge

719

HP TONER CARTRIDGES

HP 92275A HP IIP, IIP+, IIP	.....	\$79
HP 92295A HP IID, II, III, IVD	.....	89
HP 92291A HP ILsi	.....	119
HP 92298A HP4	.....	109

Laser Printer Toner Cartridges

Canon Series II, EPS, SX	.....	\$130
Canon Series I, EP, CX, R34	.....	130
Canon Series IV, EPL	.....	95
Epson 6000 Laser Printer	.....	24
Epson Action Laser II	.....	99
Okidata LaserLine 6	.....	19
Okidata OL400/800 Series/OL810	.....	29

TAPE BACKUPS

**COLORADO
MEMORY SYSTEMS INC.**

JUMBO + Tape Backup

Colorado 120 MB DJ-10	.....	\$195
External kit, KE-9 + AB-11	.....	110
Colorado 250 MB, DJ-20	.....	265
QFA700 Internal 700MB capacity	.....	795
QFA700E External version of QFA700	.....	1099
TCO2 - GQF controller card with data compression	.....	299
DT700 - 700MB data cartridge	.....	49

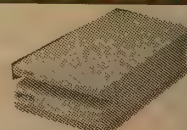
INTRODUCING:

Tralder™

Parallel Printer Port
External Tape Backup System

120MB External \$359
250MB External \$429

TAMARACK



**Professional Flatbed
Color Scanner 600dpi, 24 bit
Optional SKT Slide Scanner**

ArtiScan™ from Tamarack gives you state-of-the-art resolution and impeccable image quality, 600 dpi, 24 bit per pixel (16 million colors and 256 gray levels). Supports both the PC and the Macintosh. SCSI interface for fast operation.

ArtiScan 6000C 600DPI w/ Photostyler Software	.....	\$1049
ArtiScan 8000C 800DPI w/ Photostyler Software	.....	1349

COMPUTER INTERNATIONAL, INC.

8700 Twin Road, G, Richmond, CA 94804

EVERGREEN

(510) 526-8667 FAX (510) 526-1447



Huge Selection of Notebooks & Accessories

Largest Selection in the East Bay

TEMPO Carrier SL/25

386SL-25MHz w/64K Cache

4MB RAM / 80MB HDD

EVEREX

Removable Hard Drive & Battery
Multilevel Power Management

• 386SL-25MHz • 64K Cache • 4MB RAM exp. to 20MB • Removable hard drive & battery
• 3.5", 1.44 Floppy Drive • MS-DOS • Windows • Built-in Trackball • Carrying case



\$2095

STEP UP TO TOSHIBA QUALITY & VALUE

T1850

Introducing the Satellite™ T1850, one of three unique new products from the leader in portable computing!

- 25MHz i386™ SX processor
- 4MB RAM exp. to 12MB
- VGA display with 64 gray scales
- 80MB Hard Drive
- 1.44MB Floppy Drive

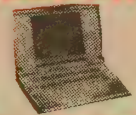


\$1699

In Touch with Tomorrow
TOSHIBA

VANDA 386SX NOTEBOOK

- 386SX-20 (Intel processor)
- 2MB standard expandable to 4MB
- VGA Display with 32 grey scales
- 80MB Hard Drive • 1.44MB Floppy Drive
- 2 Serial, 1 Parallel ports
- NICAD battery with AC adapter included
- Weight 6.2 lbs. • Deluxe Carrying Case
- FCC Class B Approved • FAX
- Includes DOS 5.0 • Modem



\$1195

\$1749/1949

TravelMate™ WinSLC™ /25 486SLC performance at 386SL prices!

- TI486SLC 25MHz processor
- 640x480 VGA display with 64 gray scales
- 2MB RAM, expandable to 6MB
- 60MB or 80MB hard disk drive
- Pre-installed Windows™ 3.1 and MS-DOS® 5.0
- TravelPoint™ Pointing Device
- Long Battery Life

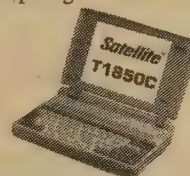


COLORFUL VALUE! THE NEW T1850C

T1850C

Introducing the Satellite™ T1850C, one of three unique new products from the leader in portable computing!

- 25MHz i386™ SX processor
- 4MB RAM exp. to 12MB
- Ultra-STN LCD with 256 colors from a palette of 262,144
- Bright VGA display
- 80MB Hard Drive
- 1.44MB Floppy Drive



\$2389

In Touch with Tomorrow
TOSHIBA

Canon

Portable Bubble Jet

Perfect for any
Notebook or
Laptop!

- Prints up to 83cps
- Text & graphics up to 360 dpi
- Uses plain paper & transparencies
- 1-year warranty



**BJ-10ex
\$279**

Quiet Portable Bubble Jet Personal Printer

- 188cps at high speed mode
- Laser-quality performance for printing text & graphics
- 50-page sheet feeder included
- Weight less than 5 lbs!

\$379

BJ-200 Laser Quality... At an InkJet Price

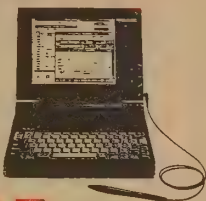
- Prints up to 4ppm
- 7 resident fonts
- 100-page sheet feeder
- Holds up to 10 envelopes

\$369

LBP-4sx Laser Beam Printer 4PPM, 1MB **\$159**
LBP-8sx Laser Beam Printer 8PPM, 1MB .. **\$179**

NEC UltraLite® SL/20P

- 386SL 20MHz Processor with 16KB Cache
- Optional 387™ SX Coprocessor Socket
- 4MB of RAM expandable to 8MB
- 80MB (19ms) or 120MB (17ms) 2.5" Hard Disk Drive
- 1.44MB 3.5" Floppy Drive
- 640x480 VGA Graphics Display
- Pre-installed MS-DOS® 5.0 and Windows™ 3.1 with Pen Extensions
- 6.8 lbs.



\$1785/1995

VALUE THAT FITS IN YOUR BRIEFCASE

T1800

Introducing the Satellite™ T1800, one of three unique new products from the leader in portable computing!

- 20MHz i386™ SX processor
- 2MB RAM exp. to 10MB
- Bright VGA display with 64 gray scales
- 60MB Hard Drive
- 1.44MB Diskette Drive
- Weighs only 6.8 lbs.



\$1349

In Touch with Tomorrow
TOSHIBA

In Touch with Tomorrow **TOSHIBA ExpressWriter 201**

Letter quality printer for people on the move - perfect companions for portable computers (battery optional).

- Travels light—only 1.87 lbs.
- 24 dot thermal printer
- 63 CPS
- 180x180 DPI Graphics

\$389

FAX/MODEM

V.32 Bis/ V.42 Bis 57,600 BPS Throughput

STANDARD COMMUNICATION FEATURES

- Easy to use Menu-Driven Fax and Data Communications Software
- Supports International CCITT and Bell Standards
- Auto-Install Utility with External COM1-COM4 select
- Full Duplex operation with Automatic Adaptive Equalization
- Speaker Volume Control and Dual RJ11 Jacks for Phone
- V.42 Bis Compression and MNP-5 error control for higher speeds
- FCC Class B & Part 68 Certified
- 5 Year Warranty backed by our Exclusive Support program

High Speed
14,400 BPS
Internal
Modem

Made in USA - 5 Year Warranty

Hi-Per 96/144Vi

\$249

100% Hayes Compatible

FAX/MODEM HIGH SPEED

PM14400FXSA

14,400 Baud v.32bis external modem with 9600 send/receive fax capabilities. Supports v.42bis and v.42. PC/XT/AT compatible, MNP5 **\$459**

PM14400FX

14,400 Baud v.32bis internal modem with 9600 send/receive fax capabilities. Includes v.42 and v.42bis. PC/XT/AT compatible, MNP5 **\$429**

PM9600SA

9600 Baud v.32 stand-alone intelligent modem with v.42 error correction & v.42bis data compression, non machine specific, MNP5 **\$359**

PM9600

9600 Baud v.32 internal half card modem with communications software. PC/XT/AT compatible, MNP5 **\$349**



"Comm-panion"

96/24 FAX/MODEM
The True Pocket-Size Fax Modem
5 Year Warranty

- AC Adaptor Included
- Extended Battery Life
- Actual Size 0.8"x2.3"x4.0"
- DOS, Windows or Mac Compatible



\$99

FAX/MODEMS

EVEREX Fax/Modem

2400 Modem/9600 Fax Int/Ext **\$139/189**

US ROBOTICS Modem

9600 Baud/Com port 1-4
PC internal version of the CV32
Com port Serial V.32 compatible,
MNP class 1-5 dial-up & leased line applications

9600 Baud Int \$169



SALE

Hours: Mon-Fri 10am-6pm
Phone orders in charge with online
and available for home delivery
Prices based on stock prices



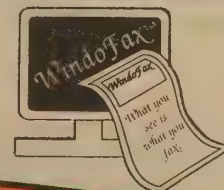
EVERGREEN COMPUTERS INT. (510) 526-8667

FAX/MODEMS

perfect Datafax

96/24 INT.

Turn your PC into a Communications Center!
FAX & MODEM NOW INCLUDED!



Fax directly from any
Windows™ application program
Supports Windows 3.0 or higher

\$79

• 5 Year Warranty

PS POSITIVE SOLUTION COMPUTER, Inc.

One Year Parts Warranty, 7 Years Labor & Technical Support

Serving You Since 1985

PS 486DX-50MHZ 256K Cache System

- 4MB RAM (70ns)
Expandable to 32MB
- 213MB Maxtor or Conner (15ms)
- 1.2MB 5.25" and 1.44MB 3.5" Floppy Drives
- 1:1 Interleave 2HD/2FD IDE Controller
- 2 Serial, 1 Parallel, and 1 Game Ports
- Real Time Clock w/Battery Backup
- Mini tower or Desktop Case with Power Supply
- 101 Enhanced Keyboard
- 1MB Trident SVGA Card
- Non-interlaced 14" 1024*768,
.28 dot SVGA monitor
- 3 Button Mouse

\$1725

Ask for your own configuration!

PS 486DX-33MHZ 64K Cache System

- 4MB RAM (70ns)
Expandable to 32MB
- 130MB Seagate Hard Disk
- 1.2MB 5.25" and 1.44MB 3.5" Floppy Drives
- 1:1 Interleave 2HD/2FD IDE Controller
- 2 Serial, 1 Parallel, and 1 Game Ports
- Real Time Clock w/Battery Backup
- Mini tower or Desktop Case with Power Supply
(Digital Display)
- 101 Enhanced Keyboard
- 1MB Trident SVGA Card
- 14" 1024*768, .28 dot SVGA monitor
- 3 Button Mouse

\$1385

Ask for your own configuration!

PS 386-40MHZ 64K Cache System

- 4MB RAM (70ns)
Expandable to 32MB
- 85MB Conner Hard Disk
- 1.2MB 5.25" and 1.44MB 3.5" Floppy Drives
- 1:1 Interleave 2HD/2FD IDE Controller
- 2 Serial, 1 Parallel, and 1 Game Ports
- Real Time Clock w/Battery Backup
- Mini tower or Desktop Case with Power Supply
- 101 Enhanced Keyboard
- 1MB Trident SVGA Card
- 14" 1024*768, .28 dot SVGA monitor
- 3 Button Mouse

\$1030

Ask for your own configuration!

PS 386DX-33MHZ 64K Cache System

- 4MB RAM (70ns)
Expandable to 32MB
- 85MB Conner Hard Disk
- 1.2MB 5.25" and 1.44MB 3.5" Floppy Drives
- 1:1 Interleave 2HD/2FD IDE Controller
- 2 Serial, 1 Parallel, and 1 Game Ports
- Real Time Clock w/Battery Backup
- Mini tower or Desktop Case with Power Supply
- 101 Enhanced Keyboard
- 1MB Trident SVGA Card
- 14" 1024*768, .28 dot SVGA monitor
- 3 Button Mouse

\$1015

Ask for your own configuration!

PS 386SX-25MHZ System

- 2MB RAM (70ns)
Expandable to 16MB
- 40MB Hard Disk
- 1.2MB 5.25" and 1.44MB 3.5" Floppy Drives
- 1:1 Interleave 2HD/2FD IDE Controller
- 2 Serial, 1 Parallel, and 1 Game Ports
- Real Time Clock w/Battery Backup
- Mini tower or Desktop Case with Power Supply
- 101 Enhanced Keyboard
- VGA Monitor w/VGA Card
- 3 Button Mouse

\$745

386SX/33MHz System

Ask for your own configuration!

DISPLAY CARDS & MONITORS

Mono graphic w/printer port	\$15
256K CGA Card	25
512K VGA Card	42
1MB Realtek SVGA Card	65
1MB Trident SVGA Card	69
Tseng ET-4000 w/64K Color ..	105
Western Digital Windows Accelerator Card	140
VGA Monitor	195
SVGA .28 Monitor	275
SVGA .28 NI "Impression"	300
SVGA .28 NI "Relisys"	320
Used Mono Monitor	25

MODEM SPECIALS

2400 Internal Modem	\$35
9600/2400 Fax/Modem	60
With BitFax for Windows	65
9600/2400 Fax/Modem Pocket Size	\$115
14,400 Fax/14,400 Modem	220

FREE
BITCOM OR BITFAX
SOFTWARE INCLUDED

MOUSE

Logitech Mouseman ...	\$49
MicroSoft Mouse	55
3 Button Mouse	9 ⁵⁰

A POSITIVE SOLUTION To Your Computer System

PSTM POSITIVE SOLUTION COMPUTER, Inc.

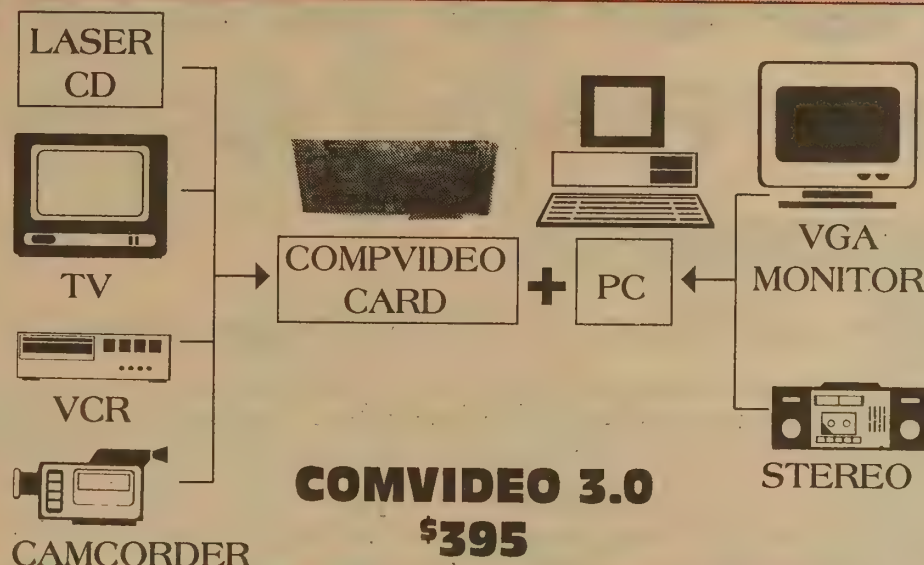
MULTIMEDIA SPECIALIST

SHOWROOM LARGEST IN EAST BAY

MULTIMEDIA PRODUCT FAMILY

Compvideo 3.0 Image Capture board

With on-screen sound control, view from full screen to any size of Windows while you are running other Windows program at the same time. Up to 3 video sources at the same time. You can capture 24 bits of true color picture for live video. Freeze, zoom, crop, color adjust, edit (cut, paste, rotate...) Saves to tiff, tga, bmp, mmp format. Supports 640x480 64K High Color VGA Mode with feature connector. J-PEG compression, image database & processing. Works with Microsoft Video Interleaved (AVI) driver for image compression during capture.



COMVIDEO 1.0 \$190

Image
Viewing
Board
TV to VGA Converter

Convert Your
Computer
Presentation Or
Animation To Display
On TV Or VCR

COMVIDEO 2.0 \$280

POWER BLASTER Jr.

FM Sound Card

1 Voice
\$30
Sound Blaster & Windows 3.1 Compatible

MM POWER GM

PCM

MPU-40 (UART Mode)
Windows 3.1
GMMT-32 Game
Upgrade the sound of your Sound Blaster

\$125

STEREO COMPUTER SPEAKERS

\$10

4000 Public Domain Software

in one CD-DISK

\$25

TOWERS & CASES

Mini Tower	\$65
Med Tower	75
Full Tower	99
Desktop Case	65
AT Case w/o P.S.	15

DRIVES

Hard Drives

40MB IBM	\$160
85MB Conner	215
120MB Seagate	265
213MB Conner	350

Floppy Drives

1.2MB 5.25"	\$55
1.44MB 3.5"	51

Tape Drives

120MB/250MB Colorado ...	\$195/265
3M 2120 Tape	23

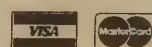
CD-ROM

Sony CD-ROM	\$319
-------------------	-------

HOURS:

MON-SAT 9:30-6 (PST)

FAX (510) 527-3823



COD

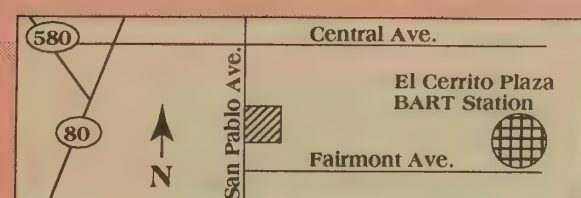
MISC.

AT IO (2S/1P/1G)	\$15
IDE Controller	15
IDE/IO Card	25
Sound Commander EX w/Speaker	75
Sound Commander FX w/Speaker	98

With System Purchase:

DOS 5.0 Package	\$40
Windows 3.1 Package	40

KeyCat **Keyboard**
101 Enhanced Keyboard
with built-in serial trackball mouse
\$60



SHOPPING FOR COMPUTER PRODUCTS?

Lowest Prices Guaranteed

FAX FOR A QUOTE

Can't find a product in this magazine?

Use this form and let our staff shop for you! We will find the product you need and give you a quote on cost and availability in less than 24hrs or one work day! It's free, fast and easy.

Directions

- * Please fill in all information requested. Remember to include your fax, phone number and/or address, so the information you request can be returned to you.
 - * Remove this FAX-FOR-A-QUOTE form from the catalog.
 - * Fax this completed form to 415/474-1898 **PLEASE DO NOT USE A COVER SHEET**
 - * The staff at Tital Systems will utilize it's vast network of computer sources to not only find your particular product, but also provide you with the very best pricing possible. If you want the product you'll be able to order it just like you would order any other product from us.
- At Tital we're committed to being the single best source for all your computer needs!**
NOTE: If you do not have a fax give us call at 415/ 474-1977.

NAME _____ Title _____
 Company Name _____ PHONE (____) _____
 Address _____ FAX (____) _____
 City _____ State _____ Zip _____

I'd like to receive my quote via:
☐ FAX ☐ PHONE ☐ MAIL

Product information: Fill in specifications, quantity and brand preference (if any) for each product you are intrested in purchasing.

Brand	Qty.	Hard Drive	RAM	Monitor
486/50 Tital	2	80MB	4MB	SVGA
486/33 AST	1	60MB	2MB	256 Gray Scale

EXAMPLE

DESK TOP COMPUTERS

Brand	Qty.	Hard Drive	RAM	Monitor
486/50				
486/33				
486/SX				
386/33				
386/SX				

LAPTOP/NOTEBOOK COMPUTERS

Brand	Qty.	Hard Drive	RAM
486			
386			

PERIPHERALS (printers, scanners, modems, CD ROM, etc.)

SOFTWARE

Manufacturer	Title	QTY

We've Got It All:

Notebook Computers
 Desktop Computers
 Printers, Peripherals,
 Modems, Monitors,
 Specialty Products

Issue
Special

Limited
Quantities

386-33 MHz Demo

4MB RAM
 60MB HDD
 SVGA
 Monitor

\$640

Call For 486 Demo Pricing
 Corporate PO's Welcome



TITAL SYSTEMS, INC.

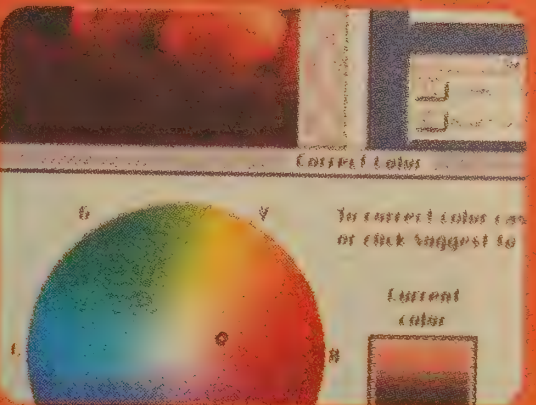
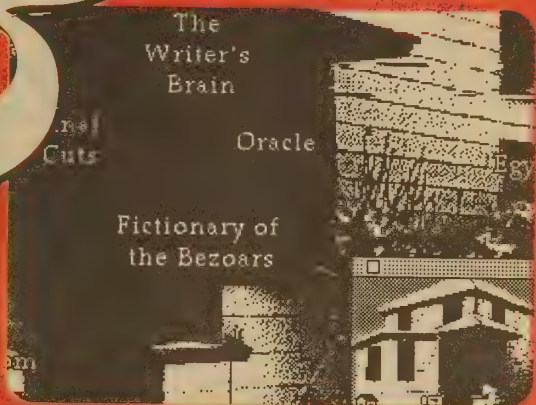
TITAL SYSTEMS

2250 Union Street, SF, CA
 For more information Call:

415-474-1977

Multi & Media

What started with desktop publishing has become a communications revolution for business, entertainment, and social interaction. Multimedia & Beyond will bring you useful, up-to-date information on products, sources, and ideas in every issue of MicroTimes.



*New Software Allows Great
Effects At Low Cost*

Multi & Media

b
e
y
o
n
d

Amiga Morph Mania

BY DOUGLAS J. NAKAHARA

For the past few years, television ads, movies, and music videos have incorporated a special effect called "morphing." You've probably seen the car commercial which shows the prior year's model magically stretch and bend to transform into the new model. *Terminator II* also made extensive use of this effect. Of course all of these morphs were accomplished using expensive, high-end graphics workstations, but this power is now available on the Amiga.

Essentially, the process of setting up a morph involves linking points on one picture to points on another, to identify related areas of the pictures. Over a series of generated frames, the source areas are transformed into the shape of the target areas with the colors being cross-dissolved. The simplest morphing involves just two pictures; however, full-motion morphs,

where the source and target are sequences of images, can also be accomplished. Recently, two new morphing programs have been introduced by ASDG and GVP.

MORPHPLUS

ASDG's product consists of several programs. For morphing you'll use two of them: Morph, which handles the morphing details, and MorphPlus, which actually performs the image processing.

Morph uses an onion-skin approach where images are displayed in gray-scale on top of one another in high or low resolution. Using a slider gadget, you can adjust the amount that each image shows through. The display images are scaled to fit the edit window; however, internally, the images still retain their original color palette and size.

Vectors are used to set the source and target points. These are nothing more than lines that begin on the source image and end on the target image. Vectors can be linked together to produce edges that surround an important feature, like an eye for example. Edges allow you to minimize the number of required vectors. This is a simple point-and-click procedure. To reposition a vector, you can move the entire vector or drag either end individually. Vector position data can also be input numerically for extreme

precision.

With vectors appearing all over the screen, things can get a little confusing. Fortunately, Morph provides many features to aid in vector placement. You can, for instance, turn off the source points and display only the target points, or vice versa. If very precise vector work is required, a zoom feature is provided to enlarge any part of an image.

To simplify the vector editing process, you can group vectors and assign descriptive names to them like "left eye." This allows you to perform certain operations on logical groupings of vectors rather than having to work with each one individually. For example, groups can be quickly made invisible or visible. You can also cut and paste a group or delete it entirely.

Groups can also be given their own motion and transparency attributes. Motion controls the movement from the start to end points of each vector. Transparency is the amount of source image mixed with the destination image. These controls allow you to do things like morphing the left eye faster than the right.

A time-line graph is used to adjust these two settings. The default for both of these is a straight line. That is, motion and transparency change evenly over time. By adding points anywhere along the line and moving them, you can bend the line to change the motion and transparency timing. The method of connecting the points can

Multimedia

Large
Selection

486

Computer System

- 486DX-33 64k Cache
- Mini Tower Case 200Watt
- 4mb Ram
- 120mb IDE Hard Disk
- 3.5" and 5.25" HD Floppies
- Color 1024 x 768 .28 Video
- Keyboard / 2P 15/ Game

\$1420

486DX-50

Computer System

- 486DX-50 256k Cache
- Mini Tower Case 200Watt
- 4mb Ram
- 120mb IDE Hard Disk
- 3.5" and 5.25" HD Floppies
- Color 1024 x 768 .28 Video
- Keyboard / 2P 15/ Game

\$1650

386DX-40

Computer System

- 386DX-40 64k Cache
- Mini Tower Case 200Watt
- 4mb Ram
- 120mb IDE Hard Disk
- 3.5" and 5.25" HD Floppies
- Color 1024 x 768 .28 Video
- Keyboard / 2P 15/ Game

\$1154

TEXEL

DM3024 Internal CD-ROM
265msec, 300kb/sec, 64k buffer
Cable not included

\$439

WatchIT! TV

by New Media Graphics
TV in a window. Includes
TV tuner plus image capture

New \$299

SupraFAX Modem

14,400 bps Send/Receive
Fax/Modem V.32bis V.42bis

\$299

Office

FOR WINDOWS

\$475

ALTEC LANSING

ACS300 Stereo Speakers
with separate SubWoofer

\$289

AMERICAN BUSINESS PHONE BOOK

10 Million business
numbers on CD-ROM

\$35

FUSION CD 16

COMPUTER CD SOUND SYSTEM
By Media Vision
CD Drive, Sound Board,
Speakers, Comptons Family
Encyclopedia and more.

\$499

PRO 16 MULTIMEDIA SYSTEM

CD-ROM With 16 bit Sound BY Media Vision

\$949

ScanMaker II

By Microtek
1200 DPI, 16 Million Color
Full page scanner

\$889

FoxPro

FOR WINDOWS
Version Upgrade

\$99

Intel SatisFAXtion

Modem/400
V.32V.42 and Smart Line sharing

\$399

VIDEO BLASTER

BY CREATIVE LABS
Full motion video in windows

\$349

SOUND BLASTER PRO 16BIT

New 16 Bit sound card

\$230

SOUND BLASTER MULTIMEDIA STARTER KIT

CD-ROM with Sound Blaster Pro

\$445

PARADOX WINDOWS

\$127

Canon BJ-10ex

Bubble Jet Printer
Portable

\$299

THE MIRACLE

Piano teaching system

\$319

COVOX Voice Recognition

1000 Word Vocabulary

\$159

Mitsumi CD-ROM

Drive plus Controller
360ms Access Time

New \$249

GRAPHICS ULTRA+

By ATI (2mb)
1280 x 1024 256 Colors
1024 x 768 65000 Colors
800 x 600 16 million colors

\$339

TURTLE BEACH MULTISOUND

High Performance
16 Bit Sound board

\$519

Plus
Books
and
Magazines

SuperScan 20"

HITACHI 20" Color Monitor
1280 x 1024 Non interlaced

\$1395

BOCAMODEM

ULTRA PERFORMANCE
14.4Kbps INTERNAL
V.32bis, V.42bis, MNP5
SEND/RECEIVE FAX

\$229

10,000

Products Instock or available next
day from local warehouses.
We special order every day

Call

Service

We service computers
and software
In store or On site

Call

Distant Suns \$59.95 Mars Explorer \$39.95 Win Dings \$49.95 WinFax Pro \$69.95 Stacker \$99.00 BizPlan Builder \$79.95 MOZART CD \$35 Sketcher \$99 Virucide \$39.95 Swimsuit Calendar CD \$35 Thrustmaster \$89 1STACT \$49.95 Direct Access \$69.95 Women of Venus CD \$35 StarTrek Audio \$39.95

CD-ROM Software	Motherboards	Software	Hardware	Networking
Microsoft Cinemania 59.95	CLONE MOTHERBOARDS W/CPU	Word for Windows 299.00	Metal CPU Floor Stand 7.00	WINDOWS For WORKGROUPS
World Vista 54.95	- 386SX-33 Motherboard 110	Excel for Windows 299.00	Dexxa Mouse 19.95	- 2 user starter kit 589.00
Multimedia Beethoven 54.95	- 386DX-40 128 C 180	Wordperfect for Windows 269.00	Color Monitor 1024 x 768 28dot 266.00	- 2 user add on starter kit 389.00
Space Adventure 69.95	- 486DX-33 64C 450	Foxpro 499.00	Thrustmaster Flight Control 89.00	- 1 user add on kit 299.00
Learn to Speak Spanish 64.95	- 486DX-50 128C ISA + Local Bus 760	Corel Draw 299.00	Thrustmaster Weapons Control 89.00	- 1 user software (req. win.) 69.00
Enhanced Battle Chess 49.95	- 486DX2/66 128C ISA + Local Bus 799	Micrographix Designer 359.00	Labtec Stereo Speakers 19.95	- 1 user with windows 159.00
Comptons Interactive Encycl 249.00	AMERICAN MEGATRENDS (AMI) 1230	Intellidraw 199.00	Logitech Scanman Color 599.00	LANTASTIC
Future Wars 49.95	- 486DX-33 ISA 256C 1230	SuperStar Pro 74.95	Thumbelina mouse 69.95	- Lantastic AE2 Starter Kit 489.00
Street Atlas USA, Delorme 99.95	- 486DX-33 EISA 128C 1230	File Runner 59.95	MousePen Pro 69.95	- Lantastic A2MBS Starter Kit 349.00
Family Doctor 59.95	- 486DX-50 ISA Super Voyager 1470	Fractal Painter Windows 259.00	Orchid Fahrenheit 1280 24bit/1mb 199.00	- Lantastic Z 85.00
Grolier Multimedia Encyclo 229.00	- 486DX-50 EISA 128C Enterprise 2 1450	Plus much more	Keyboard Desk Drawer 39.95	- Lantastic AE-2 10mb Net card 195.00
Compton Family Encycl. 189.00		Lots of Games too	Plus much more	EAGLE NE2000 16bit Net card 159.95

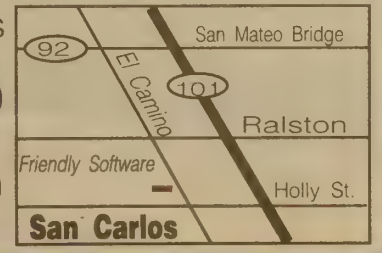
Not responsible for Typographical Errors

Prices subject to change without notice

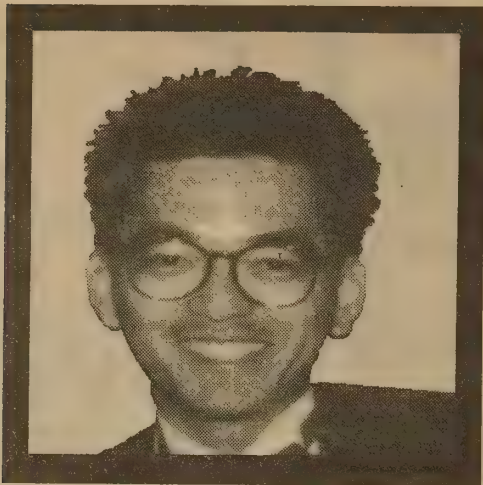
Friendly
Software
Store

17 years

376 El Camino Real, San Carlos
415-593-8275
Monday thru Friday . 10:00 to 6:30
Saturday 10:00 to 5:00
Sunday 12:00 to 5:00



Multimedia & beyond



be linear, which uses a straight line, or spline-based, which smoothes out the curve. As with vectors, each time line point can be set numerically for very precise settings.

Groups can also be used to generate a quick preview of the morph. By selecting some or all of the groups, you can get a real-time preview of the motion of your vectors. This can expose inconsistencies early on before you actually render the final morph, which may save you a considerable amount of time.

To actually execute the morph, both Morph and MorphPlus must be running at the same time. This is very memory intensive; even with 5MB of free RAM on my A3000, I was barely able to work with two 24-bit images. Time and memory can be saved by selecting "fast precision" for output, though some quality will be sacrificed.

The MorphPlus program has many of the image processing features of Art Department Professional (AD Pro) plus some new ones, such as blur, perspective, refraction, ripple, rotate, sphere, and twirl. In fact, it is really a stripped-down version of AD Pro with added operators. Moreover, if you already have AD Pro, you can install the new operators and use AD Pro in place of the MorphPlus program.

MorphPlus includes anim, IFF, and JPEG file loaders and savers. HAM-E files can also be saved. If AD Pro is used, you'll have even more loaders and savers. Additionally, using the "Presave ARexx Hook" feature, it was a fairly easy task to write an ARexx script to convert an output image to DCTV format before it was saved.

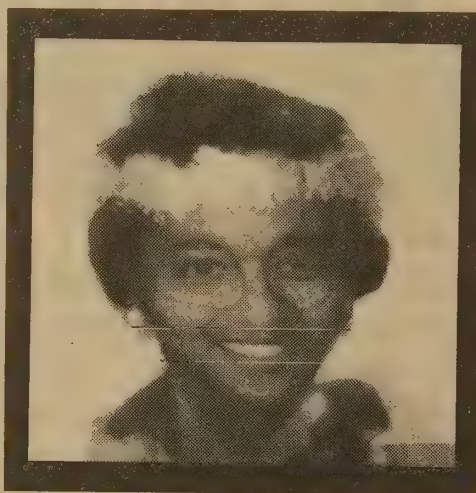
The total MorphPlus package is a massive and complex product which goes far beyond morphing. Fortunately, it comes with a thick, three-ring binder manual. I found the owl and baby tutorial images a little skimpy, however. I think better sample images could have been supplied. I would have also liked sample images for a full-motion morph.

CINEMORPH

GVP's CineMorph (v1.02) is a standalone program that differs substantially in approach from

MorphPlus. Initially, the images are set side by side, but you can resize an image's window by simply grabbing the window's corner. The images are displayed using four or eight shades of gray; however, internally they maintain their full color palette. The zoom feature lets you enlarge an image within a window and the arrow keys can be used to pan around the image.

A fishnet-like grid or mesh is placed over the images. At the intersection of each horizontal and vertical line is a point. You must drag these points to essentially outline the contours of the images. You can also easily move selected points, or entire rows or columns if you wish. Each image has the exact same number of points, though each point can be placed in different positions on each image. Additional rows or columns of lines can be added if the need for greater precision arises. Points can also be



grouped and named, for quick reselection at a later time. You cannot, however, change the visibility of points.

The mesh can either be displayed as lines or splines. Either method can also be used in the actual morph operation.

A spline is a type of bezier curve commonly used in structured drawing programs. Splines are much more difficult to control but are more accurate. Though the display method need not match the morphing output method, results are more predictable if they do. For the most part, the line mode works fine for both and is much easier. To smooth out jaggies, an anti-alias output option is also featured.

CineMorph also has the ability to set the



overall tweening and dissolve curves. These are similar to MorphPlus's motion and transpar-

ency time line graphs, respectively. Some standard curves can be used or you can manipulate the existing curve any way you desire. Tweening and dissolve can also be set for individual points. For debugging, CineMorph includes a test out-

put mode which overlays the source and target mesh in different colors.

CineMorph outputs directly to HAM-E, DCTV, IFF24 and standard Amiga image formats, including the new AGA display modes. You can save the output as individual images or have an anim file built automatically. The anim can also be made to "ping-pong" where it plays forward then reverses. However, ping-pong anim files will be twice as big, and it will take twice as long to finish, since it re-renders the frames in reverse order instead of using the frames already rendered. If you don't want to use the size of the original images, the output size can be set manually; however, this may distort the output images' aspect ratio.

CineMorph comes with a booklet-type manual but includes on-line help using Commodore's AmigaGuide hypertext program. As with MorphPlus, I would have liked to have seen a tutorial on full-motion morphing.

If you purchase CineMorph, make sure you get the latest version. GVP has added many new features since its initial release. CineMorph is actually a subset of GVP's brand new image processing program, with ImageFX. This appears to be GVP's answer to AD Pro. Its impressive list of features includes image processing, format conversions, special effects, etc. Utilizing the version of CineMorph that comes with ImageFX, you can access some special options, like loading, rendering, and saving using a multitude of file formats. You can also have ImageFX execute image processing commands on CineMorph's output.

OTHER ASPECTS

Full-motion morphs—involving two sequences of images as opposed to two still images—are, by their very nature, quite time-consuming. Both

VESA Local Bus! We are the Experts!

UMiracle UMiracle UMiracle UMiracle UMiracle UMiracle UMiracle UMiracle UMiracle UMiracle UMiracle UMiracle UMiracle UMiracle UMiracle UMiracle

AIR ISA VESA Local Bus Motherboard

- 0486 AIR ISA 3 Slot VESA LocalBus 256K Cache Motherboard
- 08MB 70ns RAM
- 01.2M & 1.44M TEAC Floppy Drives
- 0213MB Western Digital Harddisk 64K Cache
- 0VESA LocalBus 32Bit IDE Controller with 2S/1P/1G
- 0VESA LocalBus Cirrus-Logic 1MB Accelerator - 20M WinMark!
- 014" 1024X768NI 0.25DP Monitor
- 0Premium Mini Tower 230W PS
- 0101 KeyTronic Keyboard

See The Difference! With this name brand AIR motherboard, you get 3 VLB slots, Bus mastering capability, and guaranteed future compatibility, you are definitely buying into the future with this motherboard! Our VLB 32Bit IDE controller boosts harddisk performance to 2650KB/sec data transfer rate (by CORETEST V2.90), three times on average faster than regular ISA Bus! The Cirrus-Logic Windows Accelerator (GENOA WindowsVGA 8500VL OEM Version) also buys you incredible video performance of 20Million Winmarks and 13300 Character/ms in DOS (Landmark V2.0). Another technology advance and price breakthrough brought to you from us! No one can offer you this perfect machine at this perfect price, we guarantee it!

486-33DX \$1785

486-50DX/2 \$1885

486-66DX/2 \$2016

Recommended Upgrades:
Orchid Fahrenheit VLB STD/VA add \$24/60
Diamond VLB Stealth 24/Pro/Viper add \$30/230/370
Promise 1MB Cache VLB Controller add \$259
UltraStor SCSI-2 VLB 34F + SCSI HD add \$Call
Premium Medium/Full Size Tower add \$21/36
KFC 14"/15"/17" Multisync Monitor add \$78/200/589

AIR EISA VESA Local Bus Motherboard

- 0486 AIR EISA 3 Slot VESA LocalBus 256K Cache Motherboard
- 08MB 70ns RAM using 72 Pin SIMM
- 01.2M & 1.44M TEAC Floppy Drives
- 0213MB Western Digital Harddisk 64K Cache
- 0Promise DC-4030VL VESA LocalBus IDE 1MB Cache Controller
- 0VESA Local Bus ATI Ultra Pro VLB with 2MB VRAM
- 0KFC 15" 1280x1024 Multisync, Digital Controlled Monitor
- 0Premium Medium Tower 230W PS
- 0MO 2S/1P/1G
- 0101 KeyTronic Keyboard

Highest-end you can find! AIR EISA VESA LocalBus Motherboard supports 256MB Memory on board, yes, 256MB using 72 Pin SIMM! With 8 EISA Slot and 3 VESA LocalBus extensions, you can plug in a different bus cards you want! We bundle this machine with a 286 CPU built-in Promise DC-4030VL 1MB Cache Controller and rockets the Data Transfer Rate to 6950KB/Sec! This amazing controller supports 4HD/4FD and transfers up to 14.3MB/Sec. Besides it, we add ATI Ultra Pro VLB with 2MB VRAM, and makes Windows running at 30Million Winmarks. Believe it, you won't find a better machine at a better price!

486-33DX \$2828

486-50DX/2 \$2928

486-66DX/2 \$3059

Recommended Upgrades:
UltraStor SCSI-2 VLB 34F with SCSI HD add \$Call
Diamond Viper VLB 52Million Winmarks add \$60
Premium Full-Size Tower add \$15
KFC 17" Multisync 1280x1024 Monitor add \$389

Basic System Includes: 486 Motherboard & Intel CPU, 1MB RAM-70ns, 2HD/2FD IDE Controller with 2S/1P/1G, 1.2M Teac Floppy Drive, Standard Mini-Tower Case with 200W Power Supply, 101 Key Enhanced Keyboard.

486 ISA System Configuration

Basic System	486SX 25MHz w/128K	486DX 33MHz w/128K	486DX/2 50MHz w/128K	486DX 50MHz w/128K	486DX/2 56MHz w/128K
Basic System	\$494	\$593	\$693	\$730	\$824
Basic System plus 42MB HD, 512K VGA Card & .39DP Monitor	\$883	\$982	\$1082	\$1119	\$1213
Basic System plus 85MB HD, 512K SVGA Card & .39DP Monitor	\$923	\$1022	\$1122	\$1159	\$1253
Basic System plus 4MB RAM, 55MB HD, 1.28/1.44FD, 512K VGA & .39DP Monitor	\$1060	\$1159	\$1259	\$1296	\$1390
Basic System plus 4MB RAM, 130MB HD, 1.28/1.44FD, 512K SVGA & .39DP Monitor	\$1115	\$1214	\$1314	\$1351	\$1445
Basic System plus 4MB RAM, 213MB HD, 1.28/1.44FD, 512K SVGA & .39DP Monitor	\$1202	\$1301	\$1401	\$1438	\$1532
Basic System plus 8MB RAM, 130MB HD, 1.28/1.44FD, 512K SVGA & .39DP Monitor	\$1243	\$1342	\$1442	\$1479	\$1573
Basic System plus 8MB RAM, 213MB HD, 1.28/1.44FD, 512K SVGA & .39DP Monitor	\$1330	\$1429	\$1529	\$1566	\$1660
Basic System plus 8MB RAM, 340MB HD, 1.28/1.44FD, 512K SVGA & .39DP Monitor	\$1538	\$1637	\$1737	\$1774	\$1868

VESA Local Bus

- 0486 ISA 2 Slot VESA LocalBus 128K Cache Motherboard
- 04MB 70ns RAM
- 01.2M & 1.44M TEAC Floppy Drives
- 0130MB Maxtor Harddisk 64K Cache
- 0VESA LocalBus 32Bit IDE Controller with 2S/1P/1G
- 0VESA LocalBus Cirrus-Logic 1MB Accelerator - 20M WinMark!
- 014" 1024X768NI 0.25DP Monitor
- 0Premium Desktop 230W PS
- 0101 Key Enhanced Keyboard

Don't just blindly look for lowest priced Regular ISA system is bottom-necking. Even with a fast CPU, it's like a three hundred horse-powered YUGO, harddisk and video performances are limiting the overall performance. Think smart and get a well-balanced VESA LocalBus system for now, and for your future. Spend a hundred dollars more and break the bottom-neck! With our 2 slot VESA LocalBus motherboard with VESA LocalBus-IDE and Video Accelerator, harddisk performance TRIBLES! Video runs TEN TIMES faster in both DOS and Windows than regular ISA system. Come on in and get a ride on this soon-to-be-dominating machine! You have to see it to believe it!

486-33DX \$1480

486-50DX/2 \$1580

486-66DX/2 \$1711

Recommended Upgrades:
Orchid Fahrenheit VLB Standard/VA add \$24/\$60
Diamond VLB Stealth 24/Pro/Viper add \$30/230/370
Promise 1MB Cache VLB Controller add \$259
UltraStor SCSI-2 VLB 34F + SCSI HD add \$Call
Premium Medium/Full Size Tower add \$19/34
KFC 14"/15"/17" Multisync Monitor add \$78/200/589

Call for DX 50MHz VESA LocalBus!

Hard Disks

85MB IDE WDAC280.....	\$195
130MB IDE WDAC2120.....	\$240
170MB IDE WDAC2170.....	\$285
213MB IDE WDAC2200.....	\$327
340MB IDE WDAC2340.....	\$535
877MB SCSI-2 3.5".....	\$1069
1.2GB SCSI-2 3.5".....	\$1519
122MB IDE 256K Cache.....	\$315
240MB IDE 256K Cache.....	\$459
425MB IDE/SCSI 3.5" 9MS.....	\$869
1.2GB SCSI-2 10MS.....	\$1659

130MB IDE 7120AT 15MS.....	\$240
213MB IDE 7213AT 15MS.....	\$345
340MB IDE/SCSI 15MS.....	\$565/585
535MB IDE LXT535 12MS.....	\$929
535MB SCSI LXT535 12MS.....	\$989
40MB IDE CP3000 28MS.....	\$145
85MB IDE CP30084 17MS.....	\$185
120MB IDE CP30104 19MS.....	\$239
170MB CP30174E 17MS.....	\$269
170MB SCSI CP30170.....	\$319
213MB IDE CP30204F 256K.....	\$369
213MB SCSI CP30200 256K.....	\$389
544MB IDE CP3544 12MS.....	\$889
540MB SCSI-2 CP3540.....	\$Call

Computer Upgrades

486 ISA 128K Cache (25/33/50MHz-SX/DX/DX2).....	\$120
486 ISA VESA LB 128K 2 VLB Slot (25/33MHz).....	\$155
486 AIR ISA VESA LB 256K 3 VLB Slot (33/50MHz).....	\$236/249
486 AIR EISA VESA LB 256K 3 VLB Slot.....	
Upto 256MB using 72Pin SIMM (33/50MHz).....	\$465/500
486 Orchid VESA VLB SuperBoard 256K Cache 2 VLB Slot (33/50MHz).....	\$290/330
1MB RAM (256K-70ns SIMMx4).....	\$39
4MB RAM (1M-70ns SIMMx4).....	\$128
16MB RAM (4M-70ns SIMMx4).....	\$520
72Pin SIMM Module (4MB/8MB/16MB).....	\$150/280/540
ATI/O 2S/1P/1G.....	\$12
16Bit IDE 2FD/2HD with 2S/1P/1G.....	\$14
VESA LocalBus IDE Controller with 2S/1P/1G.....	\$52
Promise DC-4030VL VLB IDE 1MB Cache IDE.....	\$260+39
DTC 2270VL VLB IDE with 2S/1P/1G.....	\$105
DTC IDE EISA Controller 2290.....	\$135
UltraStor EISA SCSI 64K Cache 24F.....	\$409
UltraStor SCSI-2 VLB 32K Bus-Mastering 34F.....	\$285
Video Card:	
16Bit 512K/1MB Trident SVGA 1024x768.....	\$39/59
16Bit 1MB Tseng-4000 72Hz 32K Color.....	\$81
SpeedStar 24X Accelerator 1MB 16.7M Color.....	\$148
Tseng ET4000 VESA LB 1280x1024 16.7M Color.....	\$125
Fahrenheit VLB w/1MB Standard/Voice Annotation.....	\$159/195
Diamond Stealth 24 VLB 1MB DRAM S3-805.....	\$165
Diamond Stealth Pro VLB VRAM S3-805 2MB.....	\$365
Diamond Viper VLB VRAM 52M Winmarks 2MB.....	\$505
ATI Ultra Pro VLB 2MB VRAM.....	\$445
Genoa WindowsVGA VLB 1MB.....	\$170
VLB Cirrus Logic Windows Accelerator.....	\$135
14" 1024x768x0.39DP.....	\$205
14" 1024x768x0.28DP.....	\$255
14" 1024x768Nix0.28DP.....	\$285
14" KFC Multisync, 1024x768Nix0.28DP, Digital-Control, Non-Glared.....	\$363
15" KFC Multisync, 1280x1024Nix0.28DP, Digital-Control, Non-Glared, Flat-Screen.....	\$485
17" KFC Multisync, 1280x1024Nix0.28DP, Digital-Control, Non-Glared, Flat-Screen.....	\$874
2400 Baud Internal + Software.....	\$31
2400 Baud 9600 S/R Fax Int. + Software.....	\$57
14.4K Baud V.32Bis V.42Bis MNP5 9600 S/R Fax Internal + Software.....	\$194
Teac 1.2M 5.25".....	\$53
Teac 1.44M 3.5".....	\$48
Teac 2.88M 3.5".....	\$95
Teac Dual 1.44M & 1.2M.....	\$135
Archive 250MB Internal TapeBackup + Tape.....	\$215
Chicony 101 Enhanced.....	\$23
KeyTronic 101 Enhanced.....	\$34
Focus 2001 101 Enhanced Click.....	\$41
Focus 8000 111 with Calculator.....	\$44
Logitech First Mouse Serial.....	\$39
Logitech Trackman.....	\$75
MS Compatible 3-Button Mouse.....	\$15
486 CPU Cooling Fan.....	\$20
Second Cooling Fan.....	\$20

Call for MultiMedia Upgrades!

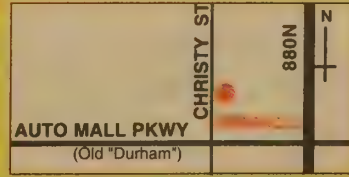
- Free Local Area Delivery for any System Purchase
- 24 Hour Online BBS with Tons of Shareware
- 1 Year Parts and Life Time Labor Warranty
- Expertise Technical Support Hotline
- 30 Day Money Back Compatibility Guarantee

Phone: 510-226-6746

Fax: 510-226-6758

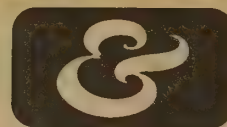
7 Days A Week 8:30AM-6:00PM PST

Prices, Specifications and Availability Subject to Change without Notice
30-Day Money Back Compatibility Guarantee Excludes Shipping and Handling
Prices are based on Cash Discount, Credit Card Purchases Subject to Surcharge
Non-Local-Area Sales are Subject to Shipping and Handling Charges
All Mail-in Returns Require a RMA Number & Must be in Original Condition Prepaid
We reserve the right to charge 15% stocking charge for all returns



UMiracle Microsystems, Inc.
"The PC Enthusiastic Group"

COD



programs do their best to minimize your efforts. In theory, you'd have to set the points for every pair of images. However, with these packages, you only need to set the points on certain frames, and the software automatically interpolates the points on the in-between frames. Of course, the more frames on which you set the points yourself, the better the final result. However, if you're doing thirty frames per second, this could be quite a task.

Still morphs, though not as spectacular, are many times easier and faster to do. Interestingly, many morphs you see, which appear to be full-motion, are actually still morphs. The effect is achieved by having the target image in a different position, so that the flow of the morph gives the impression of movement. If done properly, this can be spliced right into a video sequence without having the viewer notice that stills were used.

The biggest hint I can give you in doing morphs is to make sure both images have similar backgrounds. Dissimilar backgrounds tend to detract from the morphing effect. Also, using similar image subjects with similar proportions, though not absolutely necessary, tends to yield

better results.

Single-image morphing, called warping, can also be accomplished with either program. Warping basically allows you to stretch and compress an image, yielding a cartoon-like result.

For the videographer, imagine the response you'll get as you morph a childhood picture of the bride into an adult! A recent issue of a multimedia magazine had pictures of various film stars morphed half-way so the image had features of both people. You had to guess who the stars were. If nothing else, morphing is very entertaining.

COMPARISON

I found MorphPlus's vector-method to be easier to master than CineMorph's point grid. Using the grid, it was difficult not to distort areas which I just wanted to fade in. This is probably just a personal taste issue, since CineMorph's tutorial output was as good as I could have done with MorphPlus. Moreover, I also preferred MorphPlus's onion skin interface to CineMorph's two-window approach. The preview feature of MorphPlus was also helpful in

RESOURCES

MorphPlus, \$295 ASDG

925 Stewart St.
Madison, WI 53713
(608)273-6585

CineMorph, \$149

Great Valley
Products, Inc.
600 Clark Ave.
King of Prussia, PA
19406
(215)337-8770

Copyright © 1993 by Douglas J. Nakakihara. All rights reserved.

making sure a morph was ready to be rendered.

However, despite ASDG's claim that MorphPlus is the fastest morphing product available for the Amiga, I found that CineMorph was much faster in rendering and required much less RAM overhead. Also, CineMorph's output format control was more straightforward to use. Both programs now support image processing via their sister programs, AD Pro and ImageFX, so they are quite versatile.

Numerical vector setting and other vector editing functions allow MorphPlus to be much more detailed and precise in setting up a morph. The cost is increased rendering time, more complex setup, and an appetite for RAM. Additionally, MorphPlus is much more expensive, though you get many other features besides morphing.

In a nutshell, CineMorph is fast and straightforward, while MorphPlus is slower and more complex. If you need to do detailed object morphing, MorphPlus would be my choice. Otherwise, you need to weigh the pros and cons of each product based on your own needs. Both of these are solid professional products and would be tremendous additions to your Amiga software library. ■

Desktop Video Solutions

WHICH SYSTEM IS RIGHT FOR YOU?

Matrox Studio - A/B-Roll and A/B/C-Roll systems with complete editing control, DVEs, 24-bit graphics, and high performance digital audio. Uses the Matrox Illuminator Pro graphics card. MS-DOS based platform.

Complete desktop systems from \$11,495.00

Matrox Producer - Low cost cuts editing system for use with (2) prosumer decks or RS-232 decks. Includes Matrox Illuminator 16 graphics card with Personal Producer software, Tempra Pro paint program, and Inscribe character generator. MS-DOS based platform.

Complete desktop systems from \$5,395.00

Newtek Video Toaster - A complete all-in-one broadcast quality video production studio. Providing 4 input switcher, DVEs, character generator, 24-paint program, 3D animation, dual frame buffer, luminance key, and frame grabber. Amiga based platform.

Complete desktop systems from \$4,000.00

Fast Video Machine - A/B-Roll editing system complete with machine control, DVEs, Audio Mixer, Video Switcher & TBCs. MS-DOS based platform.

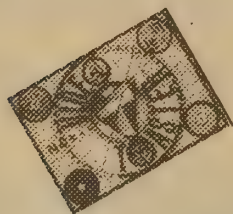
Complete desktop systems from \$5,495.00

Videomedia OZ - Complete A/B-Roll editing system utilizing VLAN for control of any VTR. MS-DOS based platform.

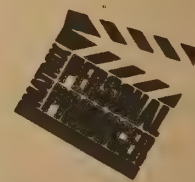
Complete desktop systems from \$5,000.00

RGB AmiLink - Cuts-only or A/B-Roll editing system which incorporates all of the conventional video tape editor's needs into an integrated video tool. MS-DOS or Amiga based platform.

Cuts-only systems from \$900.00

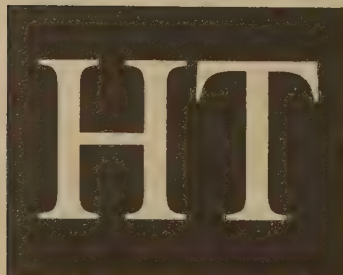


AmiLink
Videomedia OZ



Matrox
STUDIO

Future Video



ELECTRONICS
computer systems

275 N. Mathilda Ave., Sunnyvale, CA 94086
Store Hours: 9:30-6 M-W,F • 9:30-8 Th • 9-5 Sat • Closed Sunday

Weekly Seminars

Join us every Friday for desktop video seminars.

Each week a different subject.

Held at 10:00 AM., starting Feb. 12th.

Call for Space.

(408)737-0900

fax (408)245-3109

COMREX SYSTEMATION

IMAGING SYSTEM SPECIAL OFFER

Orchid VLB VESA Local Bus

486DX2-66MHz with 256K Cache
Full Size Tower with 250W Power Supply
4MB RAM 70ns, Expandable to 32MB
Teac 1.2MB and 1.44MB Floppy Drive
2 Serial, 1 Parallel & 1 Game Port
Maxtor 210MB Hard Disk
Orchid VESA Local Bus Controller
Orchid Fahrenheit VLB SVGA w/ 1MB
UltraSonic 15" .28 DP SVGA Monitor
Keytronic 101K Enhanced Keyboard

\$2,690.00

with Free Full Page Scanner

SIS VESA Local Bus System

486DX-33MHz with 128K Cache
Med Tower with 250W Power Supply
4MB RAM 70ns, Expandable to 32MB
Teac 1.2MB and 1.44MB Floppy Drive
2 Serial, 1 Parallel & 1 Game Port
Maxtor 210MB Hard Disk
Winbond VESA Local Bus Controller
GENOVA VLB SVGA w/ 1 MB
Super VGA 14" .28 DP Monitor
Keytronic 101K Enhanced Keyboard

\$1,750.00

with Free FAX/MODEM

386/486 Dual M/B CPU System

386DX-40MHz with 64K Cache
CPU Upgradeable to 486
Mini Tower with 200W Power Supply
4MB RAM, Expandable to 32MB
Teac 1.2MB or 1.44MB Floppy Drive
2 Serial, 1 Parallel & 1 Game Port
Maxtor 120MB Hard Disk
Super VGA Card with 512K
Super VGA .39 DP Monitor
101Key Enhanced Keyboard

\$1,299.00

with Free Full Page Scanner

Cyrix 486DLC-33MHz

\$ 1,045.00

Intel 486SX-25MHz

\$ 1,095.00

Mini AT Case with 230W Power Supply
4MB RAM, Expandable to 32MB
Teac 1.2MB or 1.44MB Floppy Drive
IDE 2 Hard/2 Floppy Drive Controller
2 Serial, 1 Parallel & 1 Game Port
Conner 80MB Hard Disk
Super VGA Card with 1 MB
Super VGA .39 DP Monitor
101Key Enhanced Keyboard

ASUS 386DX-40MHz

\$ 709.00

ALI 386SX-33MHz

\$ 619.00

Mini Tower Case with 230W Power Supply
2MB RAM
Teac 1.2MB or 1.44MB Floppy Drive
IDE 2 Hard/2 Floppy Drive Controller
2 Serial, 1 Parallel & 1 Game Port
Conner 40MB Hard Disk
Super VGA Card with 256K
Super VGA Mono Monitor
101Key Enhanced Keyboard

New Fax Modem

Rockwell Internal Fax/Modem
14,400BPS **\$199**

Rockwell External Fax/Modem
14,400BPS **\$229**

High Quality VGA Card

Trident 1024 SVGA w/1meg **\$ 60**

Diamond SpeedStar 24x
w/1meg **\$ 165**

Diamond Stealth 24x HiColor **\$ 185**

ET4000 LV w/1meg
TrueColor **\$ 85**

Genova LV w/1meg **\$ 155**

Orchid Fahrenheit LV
w/1meg **\$ 175**

Up-Grade Mother Board (CPU Not Installed)

Orchid 486 33MHZ VLB
256K Cache - installed **\$330**

Orchid 486 50MHZ VLB
256K Cache - installed **\$360**

SIS 486 LVB
128K Cache - installed **\$160**

Vega 486 LVB
256K Cache - installed **\$ 215**

BackUp System

250 MB by ARCHIVE **\$ 215**

120 MB by Colorado **\$ 205**

250 MB by Colorado **\$ 250**

IMAGING SCANNER

B/W Full Page 300DPI Scanner
W/ WordScan OCR **\$ 325**
Color 600DPI 24bit Full Page Scanner
W/ Picture Publisher LE **\$ 595**
Micotek Scan Maker II 1200 DPI Scanner
W/ Photo Shop LE **\$ 855**
W/ Photo Styler Full **\$ 1150**

FAX SOLUTION

B/W Full Page 300DPI Scanner
W/ Fax Card & S/W **\$ 349**

MEMORY UPGRADE

256X3-70	\$ 9.50
1MBx3-70	\$ 32
1MBx3-80	\$ 31
4MBx9-70	\$ 123
486DX-33 CPU	\$ 340
486DX-50 CPU	\$ 485
486DX2-66 CPU	\$ 590

HARD DISK

Conner 40MB 28ms	\$ 149
Conner 80MB 19ms	\$ 195
Conner 170MB 19ms	\$ 270
Maxtor 130MB 15ms	\$ 235
Maxtor 210MB 15ms	\$ 355
Western Digital 250MB 15ms	\$ 409
Western Digital 340MB 15ms	\$ 550
Fujitsu 520MB 11ms	\$ 899
Maxtor 660MB SCSI 16ms	\$ 1050
Toshiba 877MB SCSI 12ms	\$ 1275
Maxtor 1.2GB SCSI 13ms	\$ 1310
Maxtor 1.7GB SCSI 13ms	\$ 1650

MONITOR

Infiniti 14" Super GA .28 DP	\$ 269
CTX 14" Super VGA .8 DP	\$ 275
ADI 14" Super VGA .8 Low Rad.	\$ 375
Ultrasonic 15" Supe VGA .28 DP	\$ 450
Viewsonic 15" 6FS Sper VGA 72Hz	\$ 550
ViewSonic 17: V7 .2 DP N-I	\$ 990
Addonic 17" 1171 .3 DP N-I	\$ 815
NEC 3FGX 15" 1024x78 .28 DP	\$ 640
NEC 4FGX 15" 1024x78 70Hz	\$ 740
NEC 5FG 17" 1280x104 .26 DP	\$ 1350
NEC 6FG 21" 1280x104 .28DP 74Hz	\$ 2550



COMREX SYSTEMATION, INC

1800 WYATT DR., SUITE #4, SANTA CLARA, CA 95054

TEL: (408) 980-8628

FAX: (408) 980-1587

Hours: M-F 9:30 - 6:00
Sat By Appt.

- PRICE AND AVAILABILITY SUBJECT TO CHANGE WITHOUT NOTICE
- 15% RESTOCKING FEE ON ALL UNAUTHORIZED RETURNS
- ONE YEAR PARTS, 3 YEARS LABOR WARRANTY



Preview: ATXPO⁹³

Santa Clara Convention Center

February 16-19, 1993

EXHIBITORS

ATXPO⁹³, the first national conference and exposition of the Adobe Technology Exchange, comes to the Santa Clara Convention Center February 16-19, 1993. Its theme is "PostScript Language Technology and Beyond: Advances in Document Creation, Printing, and Communications."

A three-track tutorial program focuses on issues of electronic publishing, new media, and office information systems. In addition, keynote addresses will be presented by Paul Brainerd, president and founder of Aldus; Keith Davidson, executive director of Xplor International; Charles M. Geschke, president and COO of Adobe; John Warnock, chairman and CEO of Adobe; and Ed Zander, president of SunSoft. Exhibits by a number of key vendors will spotlight applications for current and emerging PostScript technologies.

For registration and other information, contact Vicki Pedretti at ATX, (408)562-604, 1-800-446-5622, fax (408)562-6381.

Addison-Wesley Publishing Company
 Adobe Systems
 Aldus Corporation
 Apple Computer
 Color Resource (The)
 Colossal Graphics
 Digital Equipment Corporation
 Electronics for Imaging, Inc.
 Hewlett-Packard (Printer Division)
 Island Graphics Corporation
 Lexmark International
 Linotype-Hell
 Litho Development & Research
 Micro Publishing News
 MicroTimes
 NEC Technologies, Inc.
 NewGen Systems Corporation
 OnLine Design
 RasterOps
 Ricoh Corporation
 Screen (USA)
 Synergy Computer Graphics
 Tektronix
 Texas Instruments

CONFERENCE SCHEDULE

Electronic Publishing Track

Market Directions

10:15 am-11:30 am, Wednesday, February 17

Calibrating Your Imagesetter for Color Work

10:15 am-11:30 am, Thursday, February 18

Trapping Tools

1:30 pm-2:30 pm, Wednesday, February 17

Imposition

1:30 pm-2:30 pm, Thursday, February 18

HSC leads the way to savings with the best in Silicon Valley Exotica!

Now Available...New HSC Catalog!!

Months in the making... our new 48-page catalog listing thousands of electronic essentials! Send \$1.00 (or free with order) and thanks for waiting patiently!

Affordable AT Backplane!

Do you have a plug-in ISA Bus CPU Card you need a home for? Try this eight-slot AT Backplane for size! Measures only 7.5" x 8.5" to fit in many custom enclosures. It has a standard IBM-type keyboard connector (5-pin DIN) and the standard power supply connection, so any IBM or Clone type power supply will work. The high-quality Dutch-made motherboard is of multilayer construction with internal ground plane. Fully assembled with eight edge connectors. Hurry, when word gets out, these won't last long! HSC# 13643 \$29.95

Teeny Tiny Tuners!

This tiny (only 1" x 1.75" x .5") PC mount package is a varactor tuned FM tuner! Made by Toko (Model #TMC103A) Uses 8 - 12VDC, tunes from 88.3 to 108.1 MHz from 75 ohm antenna input, has 10.7 MHz IF output with Vco output for control feedback to tuning circuitry. We provide a schematic of a suggested application showing pinout of this module with related tuning circuit. HSC# 13101 \$4.95 ea. or 10/\$39.95

Still available, but for how long?

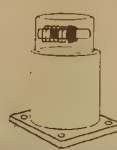


It usually doesn't take long to sell out of these popular batteries when we get a batch in, so stock up now! These Yuasa NP7-12 rechargeable lead-acid batteries are rated at 12VDC, 7 amp/hours. Perfect for hobbyists, Ham field-days, burglar alarms, etc. New from the crate, '91 date codes. 2.5" x 4" x 6" with solderless quick-connect tabs. HSC# 13123 \$14.95 ea.

TV Modulator -- Industrial Strength!

Just what you needed to finish that home television station...this Channel 2 modulator by Telemet! These used units accept a composite video signal and audio and provide a VHF television carrier (channel 2) modulated by the input signal. 19" Rack mount chassis, schematic included. Full Manual available, \$5 HSC#13657 \$59.95

Test for Shock -- Industrial Strength!



Here is an unusual item...a resettable G-force gauge! This high quality item is used to detect mechanical shocks in excess of 15 G's...perfect for determining if your shipment was dropped by the shipping company, or use to calibrate your rocket sled! Measures 2" tall on a 1 5/8" square base. Detailed data sheet enclosed. HSC# 13656 \$5.95

Torque Wrench -- Industrial Strength!

Just in -- industrial torque wrenches by Mountz. These brand new items are calibrated from 20 to 200 kgf.cm and feature "click" action torque control. Snap-fit heads include useful 3/8" drive ratchet, 11/16", 30 mm and 13mm open ends, and 17mm box end. HSC#13655 Set only, \$19.95

Macintosh Serial Cable Set

Three piece set of Mac accessory cables consists of one RJ11 to DB9S cable, one RJ11 to Mini-DIN 8M cable, and one DB9M to DB25F adaptor. Sorry, we don't know what accessories they were intended for, but they appear to be plain, standard cables, and at this price you can afford to stock up and experiment. Both cables are six feet long, are fully shielded and have noise suppressor chokes, and all three items are an attractive off-white color. Large quantity purchase means a special low price! HSC#13048 \$4.95 ea. or 10/\$39.95

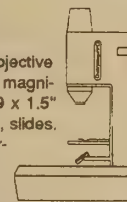
Soviet Microscope... Standard Version

They call them training microscopes, we would call them student-grade instruments (but not toys!) They are biological (illuminated from below via mirror) microscopes with two objective lenses (8x, 20x) and three eyepieces (7x, 10x, 15x). Optical quality and workmanship are surprisingly good. Painted cast aluminum, and chrome-plated brass. HSC# 13065 New batch, now only \$59.00



Soviet Microscope... Economy Version

Perfect for child's first microscope! Fixed objective lens and eyepiece (can't get lost!) 60X overall magnification, folds into its own carry-case, 5 x 9 x 1.5" Comes with tweezers, probe, specimen jars, slides. Plastic construction means light weight, perfect for field use. Surprisingly good optics! Perestroika produces another great value! HSC# 95062 \$19.95



Small Power Supplies, Big Savings!

These tiny switching power supplies are small in size only! They are big on performance and value, and the ones with 5 and 12 Volt outputs are perfect for use with 3.5" or smaller hard disk drives. Similar to illustration at right.



A. 2" x 6.25" x 1.25"	Skyenet, used, tested good. 110/220VAC input, 5VDC @ 2A, 12VDC @ 1.5A output.	HSC #12758	\$17.50 ea
B. 3" x 5" x 1.5"	Skyenet, new. 110/220VAC input, 12VDC @ 2A, -12VDC @ .3A output.	HSC #12378	\$19.95 ea
C. 2.75" x 5.125" x 1.25"	Skyenet, new. 110/220VAC input, 5VDC @ 2A, 12VDC @ 1A, -12VDC @ .25A output.	HSC #12799	\$22.50 ea
D. 3" x 5" x 1.5"	Protek, new. 110/220VAC input, 5VDC @ 3A, 12VDC @ 2A, -12VDC @ .3A output.	HSC #13728	\$14.95 ea Special!

Let HSC be your SCSI Hardware Headquarters!

HSC stocks an extensive collection of interconnection and accessory hardware for your SCSI installation needs. From Drive Enclosures to Cables, make HSC your SCSI Source!

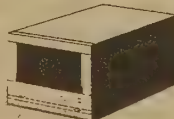
External Drive Enclosures

All drive enclosures feature fan-cooled power supplies, SCSI address switches and ICN50 connector knockouts. Style A includes ribbon cable, the others will require at least APF38006 below.

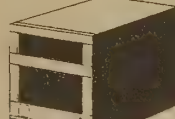
A. SKHD1	55W P.S., Room for single drive, fits under a Mac!	10" x 10" x 2.25"	\$99.95
B. SLHD2	60W P.S., Front opening for two half-height drives.	7.5" x 12" x 6.5"	\$119.95
C. SLHD3	60W P.S., Front openings for three half height drives	7.5" x 12" x 9"	\$139.95



Style "A"



Style "B"



Style "C"

Cables

MCN11015	SCSI Dual Drive Ribbon Cable (3 x IDS50) 2 ft.	\$3.95
APF38006	SCSI Drive Case Ribbon Cable (ICN50S to IDS50 to ICN50S) 2 ft.	\$8.95
APS31052	SCSI to Mac (ICN50M to DB25M) 3 ft.	\$11.95
APS31001	SCSI Cable, ICN50M to ICN50M 3 ft.	\$14.95
APS31003	SCSI Cable, ICN50M to ICN50M 6 ft.	\$16.95
SCN44002	SCSI-2 Cable, ICN50 Male to Half-pitch 50 Male, 6 ft.	\$33.95
SCN44023	SCSI-2 Cable, Half-pitch 50 Male to Half-pitch 50 Male, 6 ft.	\$41.95
SCN44032	SCSI-2 Cable, Half-pitch 50 Male to right angle Half-pitch 50 Male, 6 ft.	\$39.95
SDB44011	SCSI-2 Cable, DB50 Male to Half-pitch 50 Male, 6 ft.	\$35.95

Accessories

APJ42001	SCSI Address Switch with ribbon cable, 6-pin IDS connector	\$5.95
APJ42005B	SCSI Drive Mounting kit, fits Mac II, Cables included	\$9.95
APJ42006B	SCSI Drive Mounting kit, fits Mac SE, SE30, Cables included	\$10.95

35 Reasons why HSC should be your Node for Network Connections...

Pre-Assembled Cables

RGN91001B	BNC to BNC, RG58A/U Coaxial Cable, 50Ω	3 ft.	\$2.95
RGN91001C	BNC to BNC, RG58A/U Coaxial Cable, 50Ω	6 ft.	\$3.95
RGN91001	BNC to BNC, RG58A/U Coaxial Cable, 50Ω	10 ft.	\$7.95
RGN91002A	BNC to BNC, RG58A/U Coaxial Cable, 50Ω	25 ft.	\$9.95
RGN91011	BNC to BNC, RG58A/U Coaxial Cable, 50Ω	50 ft.	\$12.49
DATA-2006	RJ45 to RJ45, Twisted Pair	6 ft.	\$3.39
DATA-2010	RJ45 to RJ45, Twisted Pair	10 ft.	\$3.99

Cable

3130	RG58 Coaxial Cable, Stranded center conductor, 50Ω	\$12/ft	\$51.00/500'
3170	RG58 Coaxial Cable, Solid center conductor, 50Ω	\$12/ft	\$51.00/500'
3710	RG62 Coaxial Cable, 93Ω	\$19/ft	\$80.75/500'
3780	RG213 Coaxial Cable, 50Ω	\$45/ft	\$191.25/500'
C0740	24AWG, 1 foil-shielded pair	\$11/ft	\$47.00/500'
C0601	24AWG, 2 foil-shielded pairs	\$15/ft	\$63.50/500'
C0602	24AWG, 3 foil-shielded pairs	\$18/ft	\$75.50/500'
CTJ90151	Telephone cable, 4 conductor (flat)	\$05/ft	\$29.95/1000'
CTJ90165	Telephone cable, 6 conductor (flat)	\$06/ft	\$39.95/1000'
CTJ90176	Telephone cable, 8 conductor (flat)	\$12/ft	\$59.95/1000'

Connectors, Adaptors

943B	BNC Female for RG58, Crimp-on	\$1.49
945B	BNC Female for RG58, Clamp type	\$1.49
977B	BNC Female for RG58, Twist-on	\$1.69
974B	BNC Male for RG58, Crimp-on	\$1.36
954NPB	BNC Male for RG58, Clamp type	\$1.40
991B	BNC Male for RG58, Twist-on	\$1.49
959NPB	BNC Adaptor, Female to Female	\$2.69
976B	BNC Adaptor, Male to Male	\$1.98
956NPB	BNC Adaptor, one Male to two Females "Tee"	\$2.69
981NPB	BNC Adaptor, all Female "Tee"	\$2.69
TEC1B	Modular telephone plug, 4 conductor	\$0.06
TEC3B	Modular telephone plug, 6 conductor	\$0.08
TEC4B	Modular telephone plug, 8 conductor	\$0.16
CON50003R	Modular telephone plug for round cable, 6 conductor	\$0.10
CON50007R	Modular telephone plug for round cable, 8 conductor	\$0.18

Terminators

971LB	BNC Terminator, 50Ω	\$1.95
971B	BNC Terminator, 75Ω	\$1.95
971CB	BNC Terminator, 93Ω	\$1.95

Terms: Some quantities limited; all items subject to prior sale. Minimum order: \$10.00 plus shipping. Orders under \$20.00 subject to \$2.00 handling fee, in addition to shipping. All orders shipped FOB Santa Clara, CA (this means you pay freight!) by UPS Surface (no P.O. Boxes) unless otherwise specified, in which case prevailing carrier rate plus \$5.00 handling fee applies. Prepaid orders that don't include shipping charges will be shipped freight COD. There is a \$4.00 UPS charge added to shipping charges for COD shipments. If you have questions about your order, please call Customer Service at (408) 732-1854 M-F 9AM to 5PM PST.

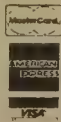
HALTED
specialties co.

HSC Electronic Supply

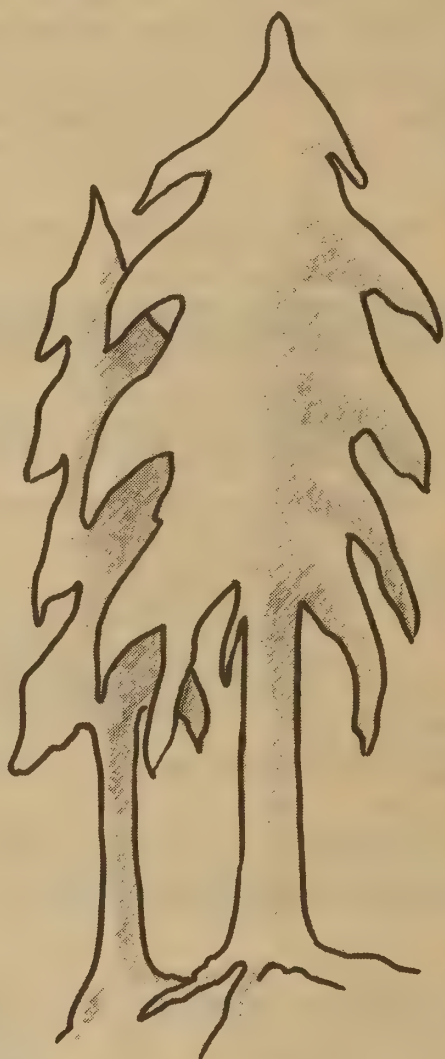
Toll Free (Orders Only) 1-800-4 HALTED (1-800-442-5833)

Retail Stores:

3500 Ryder St., Santa Clara, CA 95051 (408) 732-1573
4837 Amber Ln., Sacramento, CA 95841 (916) 338-2545
6819 Redwood Dr., Cotati, CA 94931 (707) 792-2277



"Every week,
half a million trees get
cut down to make Sun-
day newspapers that
end up in the trash."*



RECYCLE

your copy of

MICROTIMES

*Source: 1991-Take It Back Foundation, Inc.

MultiMedia & beyond

High Fidelity Color

3:00 pm-4:30 pm, Wednesday, February 17

Future of Service Bureaus

10:15 am-11:30 am, Friday, February 19

Profitability Issues

1:30 pm-2:30 pm, Friday, February 19

Equipment Reviews

3:00 pm-4:30 pm, Thursday, February 18

Users Tell the Vendors

3:00 pm-4:15 pm, Friday, February 19

New Media Track

Document Communication

10:15 am-11:30 am, Thursday, February 18

1:30 pm-2:30 pm, Friday, February 19

Multimedia

10:15 am-11:30 am, Wednesday, February 17

1:30 pm-2:30 pm, Thursday, February 18

High-Speed Digital Communications-ISDN

1:30 pm-2:30 pm, Wednesday, February 17

3:00 pm-4:30 pm, Thursday, February 18

CD-ROM

3:00 pm-4:30 pm, Wednesday, February 17

10:15 am-11:30 am, Friday, February 19

Office Information Systems Track

Today's Office Environment

10:15 am-11:30 am, Wednesday, February 17

Evolution of Page Description Languages

1:30 pm-2:30 pm, Thursday, February 18

Multifunctional Devices Hit Mainstream

3:00 pm-4:30 pm, Thursday, February 18

Network Printing Issues

10:15 am-11:30 am, Thursday, February 18

Make Your Point-Say It With Type

1:30 pm-2:30 pm, Wednesday, February 17

Uses of Type

3:00 pm-4:30 pm, Wednesday, February 17

Document Interchange and Distribution

10:15 am-11:30 am, Friday, February 19

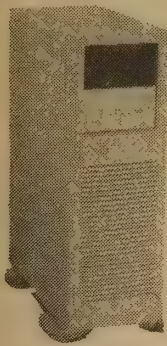
Technology Impact

1:30 pm-2:30 pm, Friday, February 19

Business Council Speak Easy

3:00 pm-4:15 pm, Friday, February 19

SPECIAL



Dual cooling fans, Easy Access swing open side doors, Slide 'n Snap drive rails, 4 exposed and 3 hidden drive bays, 230W UL power supply.

\$152

upgrade to 250W UL PS ADD \$12
upgrade to 300W UL PS ADD \$25
Medium Size Available Now! **\$125**

EVERYDAY LOW PRICES

CASES & POWER SUPPLIES

DELUXE Full-208GT (2 FANS, Easy Access Side

Doors, 4 Exp'd, 3 hid'n, 230W UL) \$154

Mini-104T (4 exp'd, 1 hidden, 200W PS) 55

Med-106T (5 exp'd, 3 hid'n, 200W UL PS) 70

Full 108T (4 exp'd, 7 hid'n, 230W UL PS) 110

Full-42T (4 exp'd, 5 hidden, 220W UL PS) 105

Full-51T (7 exp'd, 1 hidden, 220W UL PS) 105

Mini-V103T (4 Exp'd, 5 Hidden, 220W PS) 70

Mid-L103T (6 Exp'd, 3 Hidden, 200W PS) 80

Desktop-S203D (4Exp'd, 2 Hidden, 200W PS) 85

Desktop-K101D (1Exp'd, 2 Hidden, 100W PS) 70

Desktop-K101D (1Exp'd, 1 Hidden, 60W PS) 70

POWER SUPPLIES

Full PS 230W UL/250W UL/300W UL \$49/59/77

Baby PS 200W/200W UL/230W UL 37/41/45

FLOPPY, HARD, TAPE, & CD-ROM DRIVES

TEAC 1.2MB 5.25"/1.44MB 3.5 Drive \$54/48

IDE, SCSI, & ESDI Hard Drives CALL

Removable IDE Hard Disk Kit 34

COLORADO 120MB/250MB 189/239

COLORADO EXT KIT/CONTROLLER 115/94

SONY CD-ROM (380MB, Int.) 325

NEC CDR 74/84 CD-ROM

280ms, 300KB/s, ext/int 605/545

Goldstar CD ROM 380MB Ext 249

NEC Multimedia Upgrade Kit (Int/Ext) 925/995

Sound Blaster Pro Multimedia Kit

w/6 CDTitles (Int/Ext) 525/585

VIDEO DISPLAY CARDS

MGP/MCGP/EGAVGA \$14/19/54/45

DIAMOND Stealth VRAM (1M, 32K Color) 229

DIAMOND Speed Star (1M, 32K Color) 139

ORCHID Prodesigner IIs (1M, 32K Color) 139

ORCHID Fahrenheit 1280 (1M, 32K Color) 229

TSENGLAB SVGA 1M (1M, 72MHz) 84

PARADISE SVGA 1M (Windows Ace) 155

TRIDENT SVGA 512K/1M 45/59

OAK SVGA 512K/1M 45/59

ACUMOS SVGA 256K/512K 33/44

GENOA VGA 7900 (24 Bits, 1M, 16 Mil. colors) 149

BIG SALE

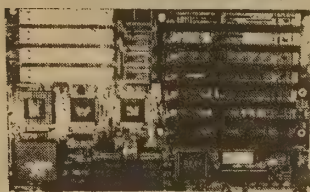
WHY DO THEY ALL PURCHASE LYNX PRODUCTS? TOTAL CUSTOMER SATISFACTION GUARANTEED!

ADAPTEC, AMD, ASYST, AT&T, CIRUS LOGIC, CNT, DIAS, FUJITSU, GE, HEWLETT PACKARD, INTEL, LSI LOGIC, MICROSOFT, NASA, NATIONAL SEMI, NEC, PG&E, PELLUCIDE, SEAGATE STANFORD UNIV., SILICON GRAPHICS, SUN MICROSYSTEMS, UCSC, UC BERKELEY, WESTINGHOUSE ELECTRIC CORP, IBM, STATE WATER RESOURCE BOARD, AND MANY MORE.

1 YEAR PARTS/ 3 YEARS LABOR/ LIFETIME TECH SUPPORT LIMITED WARRANTY

Fastest 486 Motherboard!

SX/DX/DX2 (same board)



LYNX 486-33/50 LOCAL BUS

(Direct from Manufacturer)

*Two Vesa Local Bus Slots (Standard)

*CONTAQ chipset and AMI BIOS

Norton SI: 75.70 @ 33MHz, 107.20 @ 50MHz

Landmark: 160.2 @33MHz, over 200 @50MHz

100% Compatible w/ DOS, OS/2, XENIX,

UNIX, NOVELL NETWORK

ISA 0K/64K/256K \$110/125/160

(LYNX VL-BUS add \$15.00)



Editor's Choice

Sep. 1992

Volume 1 Number 6 (U.K.)

ISA/IDE CACHE CONTROLLER (DC-600B)



*<0.3 msec Disk Average Seek Time

*Max Data Transfer Rate (ISA to cache) :

5 MB/sec

*Max Data Transfer Rate (Disk to cache) :

5 MB/sec

*528MB Drive support for DOS &

Windows

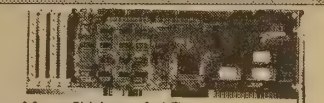
*Supports up to 4 IDE drives & 2 Floppy

drives

*Cache expandable to 16MB

\$165

VESA Bus IDE CACHE CONTROLLER (DC-690)



*<0.3 msec Disk Average Seek Time

*Max Data Transfer Rate (VESA BUS to cache) : 20 MB/sec

*Max Data Transfer Rate (Disk to cache) : 5 MB/sec

*Supports up to 4 IDE drives & 2 Floppy drives

*WD 1003 Emulation Mode Support

*528MB Drive support for DOS & Windows

*Cache expandable to 16MB

\$240 (local bus)

ISA/IDE CACHE CONTROLLER (DC-620B)



*<0.3 msec Disk Average Seek Time

*Max Data Transfer Rate (ISA to cache) : 16.5 MB/sec

*Max Data Transfer Rate (Disk to cache) : 5 MB/sec

*Supports up to 4 IDE drives & 2 Floppy drives

*WD 1003 Emulation Mode Support

*528MB Drive support for DOS & Windows

*Cache expandable to 16MB

\$245

Caching + Mirroring EISA Fast SCSI Host (DC-820)



*Adaptec 1540/1542 compatible

*Hardware Disk Mirroring Support

*Cache expandable to 16MB

*High Speed 32 Bit bus master, burst data transfer up to 33MB/sec

*Fully support SCSI-I & SCSI-II protocols

*Coexists with other SCSI, ESDI or IDE card

*Support up to 8 drives for DOS 5.0

*Support Max. DOS disk capacity of 4.5 GB

\$485

Disk-Mirroring EISA/SCSI Host Adapter (DC-320)



*Adaptec 1540/1542 compatible

*Hardware Disk Mirroring Support

*High Speed 32 Bit bus master, burst data transfer up to 33MB/sec

*Fully support SCSI-I & SCSI-II protocols

*Coexists with other SCSI, ESDI or IDE card

*Support up to 8 drives for DOS 5.0

*Support Max. DOS disk capacity of 4.5 GB

\$365

SPECIAL MONTHLY SPECIALS

Full Tower 42T/51T w/PS \$80/80

Mini Tower 104 w/PS \$52

TEAC 1.2 MB/1.44MB FDD \$49/43

IDE I/O (2S, 1P, 1G) \$18

Removable IDE HD Kit \$38

HP LaserJet IV (600dpi, 8mm) \$1385

Sony CD-ROM (Int 380MB) \$299

Touch CD-ROM (Ex 380MB) \$245

Keytronic Keyboard (USA Made) \$34

SVGA Monitors

14" (1024x768 .28) IT/NI \$249/289

15" (1280x1024 .28) NI \$429

LYNX 486 ISA Board (SX/DX/DX2)

0K/64K/256K \$110/125/160

LYNX 486 VL-Bus Board (SX/DX/DX2)

0K/64K/256K \$125/140/170

VL-BUS ET-4000 Graphic Card (1M) \$155

VL-BUS IDE Cache Controller (0K) \$240

Lynx

Board + CPU

Basic System

486DX-50/64CU EISA \$899 \$1069

486DX-33/64CU EISA 645 815

486DX-50/64CU ISA 635 805

486DX2-50/64CU ISA 590 760

486DX-33/CU ISA CALL CALL

486DX-33/64CU ISA CALL CALL

486SX-25/CU ISA CALL CALL

386DX-40/64CU ISA 179 349

386DX-33/64CU ISA 170 340

386DX-25 160 330

386SX-33 ISA 109 279

386SX-25 ISA 99 269

286-20 (512K) ISA 82 259

286-16 (512K) ISA 66 239

EVERYDAY LOW PRICES

VIDEO DISPLAY MONITORS

Mono 12"/14" \$75/94

ADI MICROSCAN 3E (1024X768 .28 NI) 325

GOLDSTAR 1460 PLUS (1024X768 .28) 269

GOLDSTAR 1490 PLUS (1280X1024 .28 NI) 599

NANAO 9070U/9080i (16" 1024X768 .28) 825/975

NANAO F550I (17" 1280X1024 .28) 1169

NANAO F550I (17" 1280X1024 .25) 1875

NANAO T660 (20" 1280x1024 .31 NI) 1825

NANAO T660I (20" 1280x1024 .31 NI, Trinitron) 2585

NEC 3FGX/4PG (15"1024X768 .28) 649/749

NEC 5FGX (OEM) (17"X1280X1024 135MHz) 1330

NEC 6FGX (OEM) (21"X1280X1024 135MHz) 2799

SEIKO CMI 1440/1450 (NI) 480/529

SEIKO CMI 1760LR (17" 1280X1024 .25) 1265

SONY 1304S (14" 1024X768 .25 NI) 569

SONY 1604S (OEM) (17" 1024X768 .25) 1010

SONY GDM 1936 (20" 1280 X1024 .30) 2455

VIEWSONIC 5E/5+ 420/525

VIEWSONIC V6E (14" 1024X768 .28) 335

VIEWSONIC V6FS (15" 1024X768 .28) 589

VIEWSONIC V7 (17" 1280X1024 .28) 989

VIEWSONIC V8 (20" 1280X1024 .31) 1543

VIEWSONIC V7 (17" OEM) 925

KEYBOARD, MOUSE & SCANNERS

MaxiSwitch/KeyTronic 101 Keyboard \$35/35

OMNIKEY 101 NI/102/ Ultra 69/79/99

LOGITECH MouseMan Ser/Bus NEW 66/70

LOGITECH TrackMan Ser/Bus /PT 72/79/99

MicroSoft Mouse Ser/Bus 84/89

Handy Mouse 12

Microsoft DOS 5.0/Microsoft Windows 3.1 45/45

MODEM & INTERFACE CARDS

2400 bps Modem Int/Ext \$39/80

2400 bps Data+9600 bps Send/Recv Fax

Int Modem 79

9600 V.32 + MNP + V.42 bpsInt/Ext Modem . 285/399

AT/IO (2S/1P/1G) 14

IDE 1:1 2HD/2FD Controller W/Cable 14

IDE 1:1 2HD/2FD & 2S/1P/1G W/Cable 19

IDE 1:1 2HD/4FD Controller 49

XT 1:1 MPM/RL 2HD Controller 52/55

XT 1:1 4FD Controller 47

AT 1:1 MFM 2HD/2FD Controller 45/65

AT 1:1 MFM 2HD/4FD Controller 75

Serial (RS232) Card/Parallel (Printer) Card 13/14

LOCAL AREA NETWORKS

Ethernet NE-1000/NE-2000 Coaxial \$78/88

Ethernet NE-1000/NE-2000 10-Base T 94/104

ARCNET 8/16 Bit Coaxial Star 41/64

ARCNET 8/16 Bit Twisted Pair 47/74

MAXLANStarter Kit (8 bit/16 bit) 185/199

LANtastic AE-2/AE-3 Starter Kit 479/549

LANtastic AE-2/AE-3 Adapter 219/249

NEW Location



Leopard Microsystems

INTERNATIONAL

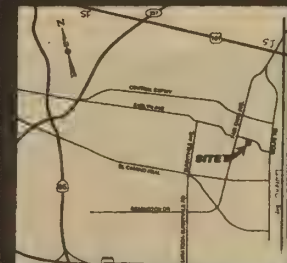
624 E. EVELYN AVENUE, SUITE A SUNNYVALE, CA 94086

NOT RESPONSIBLE FOR TYPOGRAPHICAL ERRORS. PRICES SUBJECT TO CHANGE WITHOUT NOTICE

Prices reflect special discount

CALL FOR PRICES

(408) 481-9288 FAX:(408) 481-0866



STORE HOURS

MON-FRI 9AM-6PM

SAT 10AM-5PM

SUN BY APPT. ONLY

SINCE 1987

Multimedia & beyond

Apple's Full-Color Solutions

Ofoto 2.0 From Light Source Provides Revolutionary Scanning Capabilities

BY TONY REVEAUX

In 1984, with the ghost of George Orwell breathing down our necks, we had already begun to realize the dreams of affordable choices in personal computing. Just as I was poised to acquire a Kaypro, the "liberal writer's computer," I heard rumors of a new machine from Apple that would combine text and graphics within an advanced intuitive graphic user interface.

I bet on the Mac, all 128K of it, and never looked back. But one of the most persistent complaints we heard at the earliest meetings of ShowPage, the first Macintosh User's Group in the Bay Area, was, "Where's the color?" The Apple II, though comparatively more primitive in most other ways, had been color-capable for years.

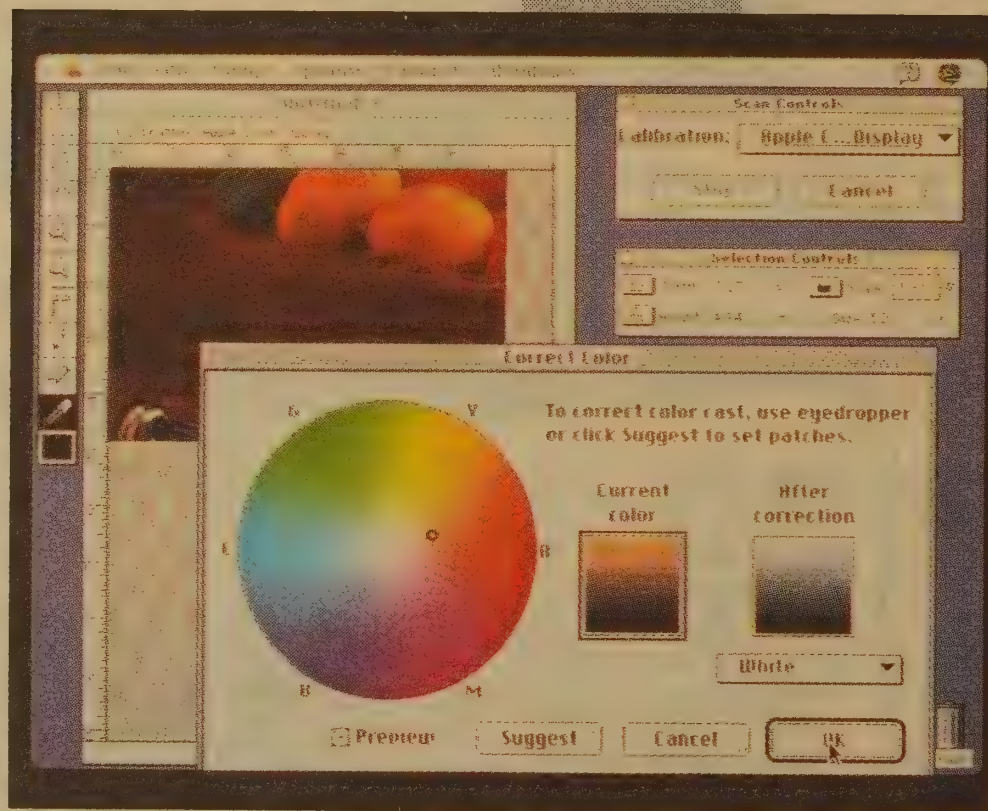
APPLE COLOR

With the Macintosh II series, the Mac entered an evolving and enduring series of color solutions for graphics, desktop publishing, and multimedia. The one area in which Apple, as a manufacturer, has held back has been input and output: color scanning and printing; the company has left that to a host of third-party developers.

Now, as Apple approaches the tenth anniversary of the Macintosh, it has taken the next big

step in desktop color publishing by providing these applications. The Apple Color One Scanner is a \$1,499 300dpi flatbed grayscale and single-pass color scanner that comes bundled with Light Source's new Ofoto 2.0 color scanning software. The Apple Color Printer, listed at \$2,599, is a 11 x 17 360dpi inkjet based on a Canon Bubble-Jet engine. According to *MacWEEK*, Apple is also ready to bring out a Color Classic, a \$1,400 16-MHz 68030-based compact computer that supports 8-bit color displayed on a Sony 10-inch Trinitron tube. Color will also reputedly take to the road with the fresh PowerBook 165c and its 9-inch passive-matrix color LCD display.

The scanner and the printer, as good as they are, do not represent leaps of great magnitude. They, and the eagerly-awaited Color Classic and



Light Source's Ofoto 2.0 color scanning software offers color correction and color matching with calibration to input and output devices.

PowerBook 165c, are logical, incremental steps in product evolution. Ofoto 2.0, on the other hand, represents a definite advance in software technology.

Propelling Apple's march under the rainbow arch is ColorSync, which is a fundamental cornerstone in desktop color management. It would seem that Apple wanted to wait (wisely) until it could offer a total color solution before it extended its full product line into color versions and choices.

COLORSYNC: THE CORE TECHNOLOGY

Using color is complex and difficult. With monochrome imagery and output, differences in display and hard copy are degrees of resolution and dpi, between pixels that are either "on" or "off."

YOUR BEST SOURCE

SUPPLIES AND ACCESSORIES

800 KB
Certified 100% Error Free
Lifetime Warranty

DS/DD 49¢
each in packs of 50
Shipping - \$1.20 per 50

DS/HD 69¢
each in packs of 25
Shipping - 50¢ per 50

1.44 MB
Certified 100% Error Free
Lifetime Warranty

360 KB

DS/DD 21¢
in packs of 1000 or
25¢ in packs of 500
Certified 100% Error Free
Lifetime Warranty
Shipping - \$1.20 per 100

1.2 MB

DS/HD 39¢
each in packs of 50
Certified 100% Error Free • Lifetime Warranty
• Shipping - 60¢ per 50

BASF

3.5" DD 800 KB...\$6⁹⁰
3.5" HD 1.44 MB...\$11⁶⁰
5.25" DD 360 KB...\$4⁹⁰
5.25" HD 1.2 MB...\$7⁵⁰

JVC

3.5" DD 800 KB...\$6⁹⁰
3.5" HD 1.44 MB...\$10⁹⁰
5.25" DD 360 KB...\$4²⁰
5.25" HD 1.2 MB...\$6⁸⁰

KAO

3.5" DD 800 KB...\$6³⁰
3.5" HD 1.44 MB...\$10⁹⁰
5.25" DD 360 KB...\$4²⁰
5.25" HD 1.2 MB...\$6⁹⁰

Shipping - 35¢/box • min. 2 boxes

BACK UP TAPES & CARTS

3M Data Cartridges \$21⁹⁵ ea.

Stock No.	Size	Qty 2-4	Qty 5+
DC300XLP	.45 MB	\$20 ⁹⁵	\$19 ⁵⁰
DC600A	.60 MB	\$20 ⁹⁵	\$19 ⁹⁰
DC2000	.40 MB	\$14 ⁹⁹	\$14 ⁴⁰
DC2120	.Formatted	\$27 ⁹⁵	\$26 ⁹⁵
DC2080	.80 MB	\$16 ⁹⁰	\$16 ⁴⁰
DC2120	120 MB	\$19 ⁹⁴	\$18 ⁹⁰
DC6150	150 MB	\$22 ²⁹	\$21 ³⁰
DC6250	250 MB	\$26 ⁹⁵	\$26 ⁴⁰
DC6320	320 MB	\$27 ⁹⁶	\$26 ⁴⁰
DC6525	525 MB	\$32 ¹⁰	\$31 ⁶⁰

• Shipping - 50¢ each

SYQUEST REMOVABLE CARTRIDGE

\$69⁹⁵
3 or more

**SQ 400
44 MB**

Shipping \$1⁰⁰ ea

Order No.	Description	Price Each
SYQ 44	44 MB Syquest Cartridge	\$72.95
SYQ 88	88 MB Syquest Cartridge	\$129.95

For Use With Syquest Drives Only

OPTICAL DISKS

3.5" & 5.25"

128 MB-650 MB

Description	Price Ea.	3M	Price Ea.	VER
512 Bytes/sector	\$149.00		\$149.00	
1024 Bytes/sector	149.00		149.00	
128 Bytes/sector	63.00		61.00	

For Use With Optical Disk Drives Only

3M

Fmtd

3.5" DD 800 KB...\$7⁹⁹
3.5" HD 1.44 MB...\$11⁶⁰
5.25" DD 360 KB...\$5⁹⁹
5.25" HD 1.2 MB...\$8⁴⁰

Dysan 100

3.5" DD 800 KB...\$7⁹⁹
3.5" HD 1.44 MB...\$11⁶⁰
5.25" DD 360 KB...\$5⁹⁹
5.25" HD 1.2 MB...\$7⁹⁹

Verbatim

3.5" DD 800 KB...\$7⁹⁹
3.5" HD 1.44 MB...\$11⁶⁰
5.25" DD 360 KB...\$4⁹⁹
5.25" HD 1.2 MB...\$8⁹⁰

Teflon

3.5" DISK FILE HOLDS
120 \$9⁹⁵ W/LOCK



Flip Top Disk Files

Large - Holds 120-3.5",
140-5.25"\$9⁹⁵
Medium - Holds 80-3.5",
100-5.25"\$7⁹⁵
Medium - Holds 50-3.5",
50-5.25"\$4⁹⁵
All include lock & 2 keys,
tabbed dividers
Shipping - \$1.25 each

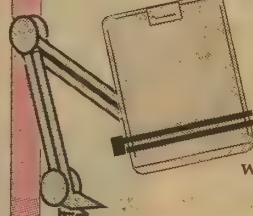
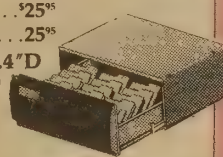


STACKABLE DISK CABINETS
Holds 210-300

WD3-Wood 3.5" Drawer, Holds 210\$18⁹⁵
Measures 14.75"W x 5.25"H x 11"D -3 Drawers
WD5-Wood 5.25" Drawer, Holds 300\$18⁹⁵
Measures 13"W x 7.25"H x 14.5"D -2 Drawers
Shipping - \$3.25 each

STACKABLE DISK DRAWERS \$25⁹⁵

BD-203 3.5" Drawer, Holds 250\$25⁹⁵
BD-205 5.25" Drawer, Holds 320\$25⁹⁵
Both measure 13"W x 7.25"H x 14.4"D
Same Footprint! Shipping - \$3⁰⁰



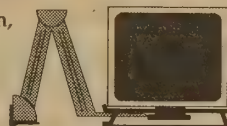
COPY HOLDER w/ARM

\$14⁹⁵

Adj. 30" Arm moves paper right
where you need it, away when you
don't. 6 per case

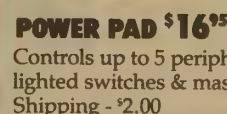
MONITOR MOVER \$39⁹⁵

Holds 60 lb, 11" x 11" platform,
2 screw clamp,
swivels 360 degrees
Shipping - \$4.⁰⁰ ea.



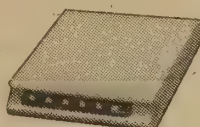
CPU STAND \$5⁹⁵

Fits most CPU cases,
from 4 to 7" wide
Shipping - \$1 ea.



POWER PAD \$16⁹⁵

Controls up to 5 peripherals with
lighted switches & master
Shipping - \$2.00



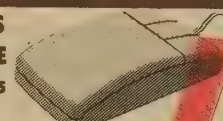
**SUPER SURGE
PROTECTOR \$13⁹⁵**

For 6 outlets & phone lines
Shipping - \$1.50

**HI-RES
MOUSE**

\$29⁹⁵

3 Button Hi-Res Mouse
w/software.....\$29⁹⁵
3 Button Hi-Res Mouse
w/Dr. Halo.....\$35⁹⁵
PS/2 Adapter.....\$5⁹⁵
20-6200 dpi
resolution software,
3 buttons, teflon
feet, with
optomechanical
ball • Shipping
- \$2.00 ea



SPECIAL

V.42 bis 2400 bd thru-put with 2400 bd speed
50% faster than MNP5—and MNP5 compatible!
2 year zoom warranty
Shipping - \$2.50



**ZOOM V.42
\$149**

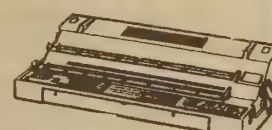
**CALL FOR
FREE CATALOG**



HP DeskJet Cartridge.....\$17⁹⁵ ea.
HP DeskJet Ink Refills . . \$19⁹⁵ 2 pak
Shipping - \$1.00/pak

PRINTING SUPPLIES

**HP LASER
TONER**



92285A Hewlett Packard Series I.....\$79⁹⁵
92295A Hewlett Packard Series II,III\$79⁹⁵
92275A Hewlett Packard Series IIP\$69⁹⁵
Shipping - \$2⁵⁰

**PRINTER
RIBBONS**

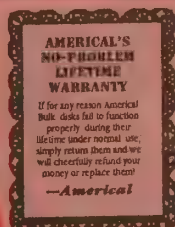


**Star Micro
NX-1000 . . \$2⁹⁵**

Printer Type	Min 6
Apple Imagewriter II	\$1 ⁹⁹
Citizen GSX-140	\$4 ⁹⁹
Epson LQ-800	\$4 ⁹⁵
Okidata 192/193	\$2 ⁹⁹
Panasonic KSP 1524/1624	\$5 ⁹⁵
Panasonic KSP 1124	\$4 ⁶⁵

Call for your printer - 100's in stock!
Min order - 6 ribbons per type
Shipping - \$1²⁵ per pack of 6

CALL OR FAX US!
1-800-288-8025
SO. CA: 818-765-3040
FAX: 818-765-3887
Call for SAME-DAY SHIPPING
Hours: Mon-Fri, 7am-6pm
Sat, 8am-4pm PST



AMERICAL GROUP

AMERICAL GROUP COMPUTER PRODUCTS, INC.
12132 SHERMAN WAY • NORTH HOLLYWOOD, CA 91605



SAME-DAY SHIPPING

Orders in by 12 noon will be shipped the same day—others, the next day. All orders charged \$4 handling fee. No extra charges for Visa, Mastercard, or Discover. Calif. residents please add 7% sales tax. Add \$5 if COD. Shipping charges for all states QON—Call for P.O. APO, overseas, airtight, HI, AK, & PR, or special charges for purchase orders. PO's accepted from gov't agencies, schools & Fortune 500 Co's ONLY. Prices subject to change. Logos are the property of their companies. © 1991 Americal Group

M u l t i M e d i a & b e y o n d

With color, there are already variable differences between the chromatic languages of classes of devices. Monitors and most scanners use RGB, but printers use CMYK (Cyan, Magenta, Yellow and Black).

Not only that, different models of different brands of devices can vary wildly in terms of the range of RGB or CMYK that they can support. Even the same device can change over time. Translating an image between RGB and CMYK is a chancy and inexact science. Color calibrators, like those from RasterOps and SuperMac, can close the gap, but this is no task for the casual communicator.

ColorSync to the rescue!

Apple's ColorSync is a system extension to QuickDraw. Like QuickTime, ColorSync utilizes the Component Manager, which allows and encourages Apple or third-party color management resources and utilities to be added on. They provide an underlying support architecture which can coexist with other extensions and enhancements, acting as a sort of "upward system" environment.

The color model it's based upon is called CIEZX, an international standard for describing perceptual color space, and each device is characterized in terms of that color space with printer driver, monitor driver and printer driver profiles. ColorSync matches the source image to the printer, and to the display as well, with a preview function that reveals which colors are not possible in terms of that color space. ColorSync adds the capability to define colors independently of the device creating the colors, and can go on from there to determine and create color matching models which can be saved and exported.

ColorSync doesn't pretend to be perfect. It provides a best-shot algorithmic approach to color matching which comes as close as possible. Companies like Light Source, Kodak, and EFI have already announced ColorSync-compatible applications, and more will follow.

Following ColorSync from the systems factory will be QuickDraw GX, a totally new graphics model. This object-based graphics manager will simplify graphics operations for programmers. This should be translated into better products faster, and into easier applications for users. QuickDraw GX will support an open print architecture with enhanced typography and multiple-master-like font handling. QuickDraw GX will incorporate ColorSync directly, and support color spaces which exceed the ColorSync implementation under today's QuickDraw.

OFOTO 2.0—THE COLOR SCANNING SOLUTION

Last year Apple turned desktop publishing's

knob up a notch with the introduction of a new scanner bundled with Ofoto 1.0, revolutionary grayscale scanning software that simplified the scanning and printing of photographs, and allowed them to look like photos when they came out of the laser printer. Now, the color version of Ofoto is out (\$350), and it proves that the sequel can be just as good if not better. It scans color photographs and other color images such that the printed page matches the original.

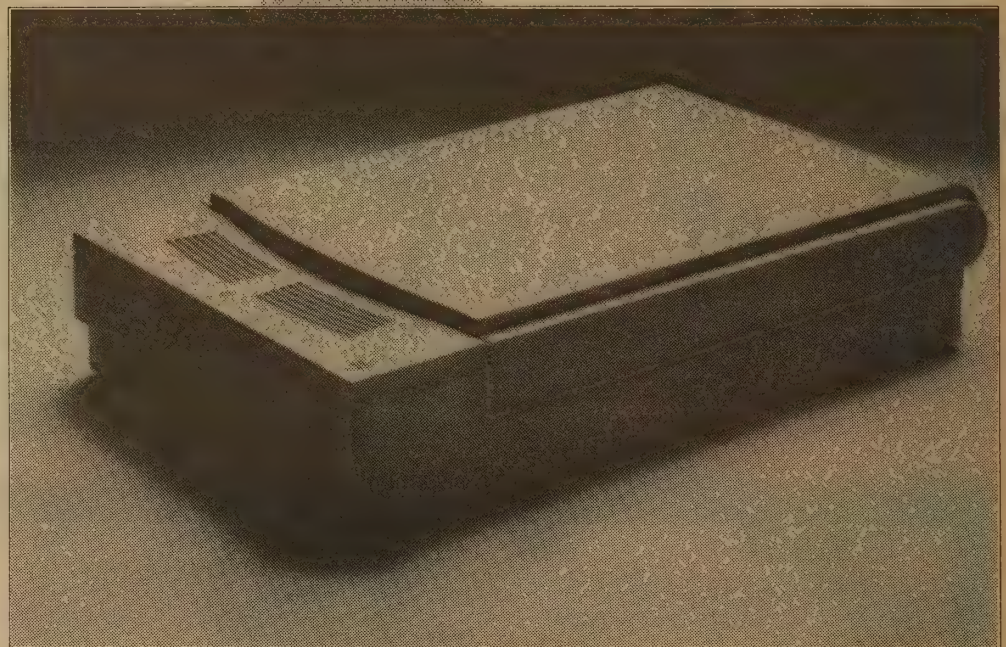
Ofoto scans images in one of two ways, automatically or manually. Autoscan does a low-resolution preview scan of the scanner platen to find the image and determine whether it is line art or a color or grayscale photograph. It then makes all scanning and printing parameter decisions automatically and does a high-resolution scan of the image.

Michael D. Solomon, president and co-CEO of Light Source, described the development goals of Ofoto 2.0: "We are the first application that is not a color management system, but is an application that is color management enabled. Because of our awareness of Apple's ColorSync, we took it a little bit further in that it is more separable.

"In Ofoto 1.0, you are always calibrating for either the printer or the monitor. Therefore, when you place the image into another application, and it's calibrated to the printer, it doesn't always look so good on the screen. In Ofoto 2.0, we are able to allow ColorSync to help us look right on the monitor, and yet it is using our printing technology. From the user's point of view, they can now see the image on the screen properly, and know that it is going to print correctly."

Sometimes photographs are taken with film that's not suited to existing lighting conditions (e.g., daylight film used under fluorescent lights). When this occurs there is a shift in the overall color of the image, commonly called a color cast. Ofoto provides the tools for correcting this problem, and can produce the image the photographer intended.

"Then," added Solomon, "there's the 'Sports Illustrated Problem'—where a series of photos are taken under different lighting conditions, and the same object, like a player's jersey, will appear in different hues. With 2.0 you can go into the key image and choose and save the key

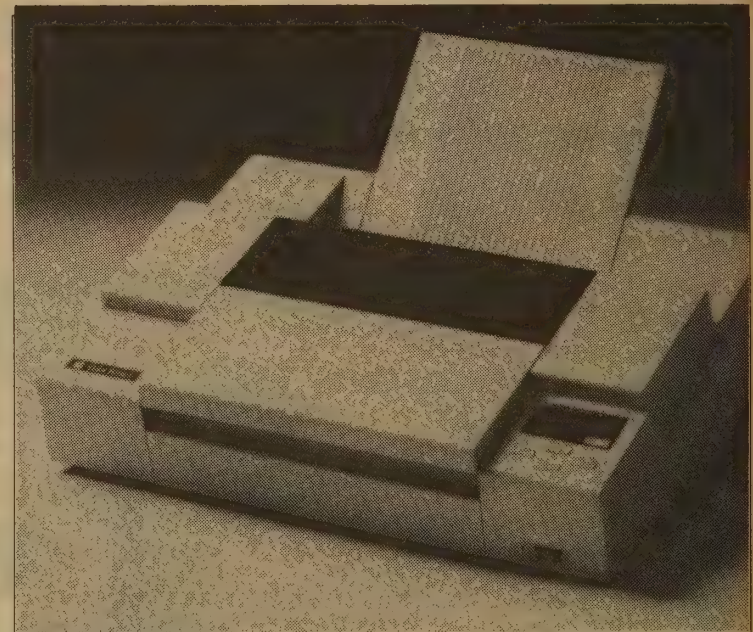


Apple's new Color OneScanner

color, and then go into the succeeding images, scan them, and correct the images to the saved key color. This can provide consistency over a series of images.

"Any adjustment that Ofoto makes will be made to the entire image, not just part of it. It is not an editing program per se. It is not area-specific, it is image-specific. We have the best product for getting images into image editing programs, because what they are getting is something that looks like that original image or scene, without having to use an image editing program to do that. Image editing programs have a hard time forcing an image to look natural.

"We added highlight and shadow control,"



Apple's Color Printer

he adds. "It is an automatic operation that is part of the scanning control. It sets the points of the dynamic range and interpolates while it scans. Ofoto 2.0 can also drop out background noise and paper color from an image. We have also added a focus capability. An out-of-focus picture can be brought into focus, on a one-button command. We have improved the sharp-



Texas Instruments
TravelMate™ 4000
Notebook Computer
New Lower Prices

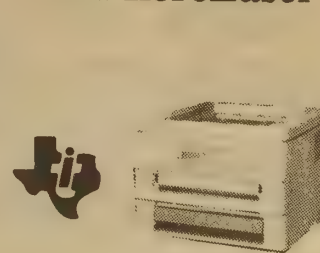
- TM4000 WinSx /25 w/120MB HD drive **\$2,395.00**
- TM4000 WinDx /25w/120MB HD drive **\$2,759.00**
- TM4000 WinDx /25 w/200MB HD drive **Call**
- TM4000 WinDx2/50 w/200MB HD drive **Call**
- 5.7 Pound, 3-5 Hours Battery Life.
- 10" VGA Display 640 X 480, External 1024x768
- 4MB RAM Expandable to 20MB
- MS-DOS 5.0, Windows 3.1, TravelPoint Device.

TI TM4000 WinSLC



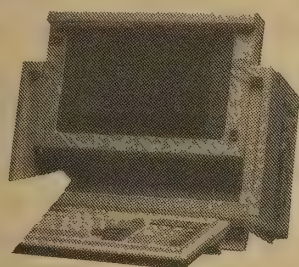
- 80486-25Mhz 60/80MB HD
- 10" VGA 640 X 480
- 2/4MB RAM Exp. to 6MB
- DOS 50, Windows 3.1
- Travel Point Mouse,
- 486SLC performance**
- at 386SL prices \$1739/\$1999**

TI MicroLaser



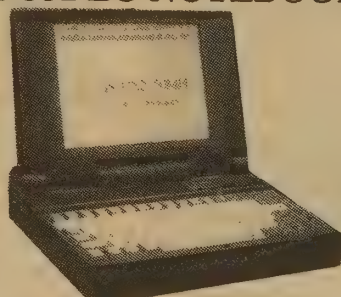
- PostScript Laser Printer
- RISC 8220 (Turbo)&68000
- PS17 9PPM \$1159
- PS35 9PPM \$1299
- PS35 Turbo 9PPM \$1499
- AppleTalk for Mac \$50

LCD / G.P. / COLOR
VGA PORTABLE



- 80386-40DLC
 - 1MB Exp. to 32MB
 - 2 or 3 expansion Slot
 - 1.2MB w/FHDC (1.44MB optional)
 - VGA 640 X 480 16 Gray Scale
 - 2 Serial 1 Parallel
 - 120MB Hard Disk
 - One year Warranty Parts & Labor
- LCD Gas plasma color
\$ 1595 \$ 1795 \$2799

486-33DLC NOTEBOOK



- 80486-33DLC
 - 9" LCD VGA Display
 - 4MB RAM Exp. to 20MB RAM
 - 1.44MB FD,
 - Built-in Hand Scanner Port.
 - 1 Serial, 1Parallel, VGA Ext. Port.
 - Built-in Fax/Modem, Mouse port.
 - One SCSI-2 Port, Keyboard Port
 - One year Warranty Parts & Labor
- \$2299 130MB / \$2499 210MB**

486-50DX2 / 486-40DLC



- 80486-50DX2 / 80486-40DLC
 - 9" LCD VGA Display
 - 4MB RAM Exp. to 20MB RAM
 - 1.44MB FD,
 - Built-in Hand Scanner Port.
 - 1 Serial, 1Parallel, VGA Ext. Port.
 - Built-in Fax/Modem, Mouse port.
 - One SCSI-2 Port, Keyboard Port
 - One year Warranty Parts & Labor
- 130MB 210MB 130MB 210MB
\$2695/ \$2899 \$2459/ \$2695

Toshiba Notebook



- T1800SX** **Best**
- 386-20 2MB 60MB HD
- T1850/T1850C** **Best**
- 386-25 4MB 80MB HD
- T3300SL** **Best**
- 386/325SL 2mb 80/120mb hd
- T4400SX/T4500SX** **Best**
- 485-25SX 2mb 120mb hd
- Color (Active)** **Call for Best Price**

386/486-33DX CRT Portable



- 386/486-33DX, 1MB RAM, 120MB HD, Color SVGA
- \$ 1595/\$1859**

IBM/ValuePoint 433DX

- 80486-33DX, (ISA)
- 8MB Exp. to 32MB
- 1.44MB Floppy Drive
- 1 Serial, 1Parallel, 1Mouse Port
- 101 Enhanced Keyboard
- 120MB Hard Disk, 5 Exp. Slots
- SVGA(1024x768), Monitor : Optional
- OS2/windows, mouse
- One year on siteWarranty

\$ 1699

McTEK 486-33/50DX

- 80486-33DX/ 486-50DX w/64K Cache
- 4MB Exp. to 32MB
- 7 Expansion, 2 Local Bus Slot
- 1.2MB Floppy Drive
- 2 Serial, 1Parallel
- 101 Enhanced Keyboard
- 120MB Hard Disk (17ms)
- Option : VGA card and monitor
- One year Warranty Parts & Labor

\$1259 / \$ 1459

McTEK 486-33/50 (EISA)

- 80486-33/50DX w/64K Cache
- 4MB Exp. to 32MB
- 8 Expansion Slot
- 1.2MB Floppy Drive
- 2 Serial, 1Parallel
- 101 Enhanced Keyboard
- 120MB Hard Disk (19ms)
- Option : VGA card and monitor
- One year Warranty Parts & Labor

\$1559 / \$1799

Monitors / Video Card

- Trident VGA w/512K \$49
- Paradise VGA w/1MB (OEM).. \$89
- Tseng Lab VGA w/1MB \$109
- Fahrenheit 1280 w/1mb VRAM \$209
- Fahrenheit 1280 VL Bus \$255
- ATI Ultra Plus w/1mb \$279
- ATI Ultra Pro w/2MB \$559
- Hercules Graphic Station(1MB)\$399
- Diamond Stealth w/1mb VRAM \$209
- SVGA Monitor .28mm \$289
- SVGA Monitor non-interlaced. \$335
- NEC 3FGX .. (In Stock)..... \$649
- NEC 4FG(In Stock)..... \$769
- NEC 5FG(In Stock)..... \$1399
- SONY 1304S \$579
- SONY 1604S \$999
- Mitsubishi 20" 1280 X 1024 ... \$1799

Printer

- HP IIP+ \$799
- HP IIP \$999
- HP 4/4M.....Call
- HP Desk Jet Plus 500 \$399
- HP Desk Writer (Mac) \$399
- HP Scanner IIP/IIC ... \$899/\$1490
- Citizen GSX240 Plus \$299
- Citizen PN48 \$299
- Citizen 200GX (9 Pin) \$169
- Canon BJ-20ex \$329
- Okidata OL400 \$685
- Panasonic KXP2124 \$309
- Panasonic 4410 Sppm \$739
- NEC Model 95 (PS Level II) . \$1375
- QMS410 \$1399
- IBM Laser Printer Model 10 ..Call
- Canon BJ-200 \$379

Misc. & Tape Drive

- Logitech Mouseman \$75
- Logitech Trackman \$89
- Microsoft Mouse \$95
- Scanman Plus/256 w/OCR ... \$399
- Artiscanner 600dpi Color ... \$1029
- ScanPlus 3000 Color \$599
- Colorado 120mb tape backup \$225
- Colorado 250mb tape backup \$275
- Modem 2400 Baud Int. \$49
- Modem/fax 2400/9600 \$89
- 14400 Fax/Modem Int. \$259
- 14400 Fax/Modem Ext. \$299
- MultiMedia Starter Kit (.Int.) \$439
- MultiMedia Starter Kit (.Ext.)\$519
- MultiMedia Upgrade Kit(Ext.)\$519
- SounBlaster Pro \$185
- Video Blaster \$345

Hard Disk Drive

- 40MB IDE \$189
- 80MB Maxtor/Conner \$225
- 120MB Quantum (IDE) \$269
- 120MB Conner (IDE) \$275
- 120MB Maxtor (IDE) \$269
- 120MB Maxtor for Mac int. \$359
- 200MB Conner (IDE) \$369
- 200MB Maxtor (IDE) \$369
- 330MB Maxtor (IDE) \$599
- 240MB Quantum (SCSI) ... \$599
- 540MB Conner (IDE) \$999
- Norton Anti Virus \$55
- PC Anywhere \$89
- Wordperfect 5.1 \$259
- Wordperfect 5.2 Tradeup ... \$99
- Microsoft Word/Excel. \$129
- Microsoft Windows 3.1 \$95

Monthly special

- AST PowerExec Notebook**
- Computer 386/486 ... Best**
- IBM Think Pad ... Call**
- NEC UltraLite SL/20 4MB**
- 80MB / 120MB HD . \$1799/2059**
- NEC UltraLite SL/25 2MB**
- 80/120MB MB HD . \$2499/2899**
- NEC Laser Printer 95 . \$1375**
- SHARP6785 386-25SL \$1769**
- Toshiba CD ROM int. . \$499**
- Upgrade computer Call**
- Rental Call**

McTek Systems, Inc.

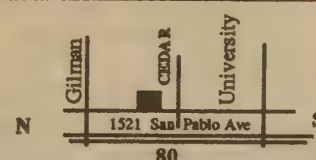
1521 San Pablo Ave. Berkeley, Ca 94702

Tel : (510) 525-5129

AUTHORIZED

ALDUS, AST, NEC
 IBM, LOTUS, NOVELL,
 TI,HERCULES,ORCHID

VISA / MASTER ACCEPTED



ALL PRICES SUBJECT TO CHANGE

Lan Professional ETHERNET PACKAGE SALE

6 PIECES PER PACKAGE

Offering The Best Price and Uncompromising Quality

• 16-BIT COAX ETHERNET ADAPTER

6 Pack..... **\$429**

• 16-BIT 10BASE T ETHERNET ADAPTER

6 Pack..... **\$449**

• 16-BIT COMBO ETHERNET ADAPTER

6 Pack..... **\$479**

CALL FOR DEALER & RESELLER DISCOUNT

VALUE LOADED:

- ** Comes with 8-user Da Vinci eMail, a dealer value of \$195
- ** Comes with Diagnostic program that makes trouble shooting a cake walk
- ** Supports 11 interrupt channels
- ** Supports all major NOS, such as:
 - CBIS Network OS
 - Microsoft TCP/IP
 - Artisoft Lantastic
 - SunMicro PC NFS
 - 3COM 3+Open
 - Microsoft LAN Manager
 - IBM LAN Server
 - Banyon Vines
 - FTP PC/TCP
 - Tiara 10Net
 - Novell Netware and Netware Lite
- ** Experienced CNE engineers, on-line technical support
- ** Supports complete network product line from ARCnet, Ethernet, to Token Ring



3350 SCOTT BLVD. BLDG. 9A, SANTA CLARA, CA 95054
(408) 496-1105 Tech Support (408) 988-6092

Fax (408) 980-1530

EDIMAX DEALER INQUIRIES & CORPORATE PO'S WELCOME

MultiMedia & beyond

ening algorithm. We have two kinds of sharpening in the program: sharpening line art, and a new algorithm, which can sharpen color photos.

"For users going to prepress, Ofoto does its own color separations. The Apple version of the (bundled) product does TIFF CYMK. In the standalone version, it also does EPS CYMK, which is a DCS (Desktop Color Separations) format. Ofoto 2.0," concludes Solomon, "does not have to be hooked up to a scanner to operate, to open up files and to work on them."

REALITY CHECK

How well will the new version of Ofoto enhance the use of color on the desktop, and is it really that "easy?" I asked two imaging professionals and early adopters what their experience has been so far.

Tom Zimmeroff, a Sausalito-based photographer, is integrating the Ofoto 2.0 scanning software into a database template supported by FileMaker Pro, which he's developing with plans to market it to other photographers. "One of the most pragmatic uses of it," said Zimmeroff, "is simply to keep a record of all of my shoots. It gives me the ability to scan in a Polaroid immediately upon completing a photographic assignment. It goes in with all the other data I've accumulated about the shoot. When I've finished, I'll input how much film I shot, which automatically carries over into the invoice."

"I can also look back at that record at any time and actually see an image of what it was that I shot. I can not only refer to the data in a literal form but also in a pictorial form."

He has chosen Ofoto 2.0 for its simplicity and accuracy. "Because I am an imaging professional I don't want to deal with more button-pushing than I have to. I like to keep it as simple as possible and concentrate on getting the job done, which is the distribution and the archiving of images."

Janet Butcher, president of Petaluma Imagesetting, a service bureau in Petaluma, has just begun to use Ofoto 2.0. "I have done a couple of jobs with [an early version of] it and so far, it works beautifully with the Color OneScanner. Ofoto 2.0 comes with pre-loaded calibrations for a lot of the output devices, such as for my Lino, and one for my QMS. I've scanned in several color photographs that are reproducing beautifully."

"On the screen, and in terms of output, it is taking advantage of every bell and whistle in the QMS, because as you know there are special screening algorithms in the ROMs of that printer that adjust for blends and things like that. Ofoto separates fine out of Quark and Aldus PrePrint, so I'm really impressed with it so far. It hasn't bombed once, and it's really nice and slick, and the interface is really easy to understand."

The practical applications of the new color Ofoto in the professional arena were recently tested under fire. One of Butcher's clients who does robot design had lost the original art for a piece and needed to reproduce it for quantity duplication. "I can scan the printed piece, and because Ofoto is so wonderful at restoring and enhancing color, they won't have to go through the whole reverse process. Before, I would have to scan things multiple times and then go all the way through to match print, and then like as not have to do it over. But with Ofoto, because the calibration is so tight to the printers, I'm not having to do it over and over and over. Usually the first time its right." ■

RESOURCES:

Apple Computer, Inc.
 20525 Mariani Ave.
 Cupertino, CA 95014
 (408)996-1010

Light Source
 17 East Sir Francis
 Drake Blvd., Ste. 100
 Larkspur, CA 94939
 (415)461-8000

CFP'93

The Third Conference on
Computers, Freedom and Privacy

9 - 12 MARCH 1993

SAN FRANCISCO AIRPORT MARRIOTT HOTEL
BURLINGAME, CALIFORNIA
SPONSORED BY ACM SIGCAS, SIGCOMM, SIGSAC



SCOPE

The Third Conference on Computers, Freedom and Privacy will assemble experts, advocates and interested people from a broad spectrum of disciplines and backgrounds in a balanced public forum to address the impact of computer and telecommunications technologies on freedom and privacy in society. Participants will include people from the fields of computer science, law, business, research, information, library science, health, public policy, government, law enforcement, public advocacy and many others. Some of the topics in the wide-ranging CFP'93 program will include:

- ELECTRONIC DEMOCRACY
- ELECTRONIC VOTING
- CENSORSHIP AND FREE SPEECH ON THE NET
- PORTRAIT OF THE ARTIST ON THE NET
- DIGITAL TELEPHONY AND CRYPTOGRAPHY
- HEALTH RECORDS AND CONFIDENTIALITY
- THE MANY FACES OF PRIVACY
- THE DIGITAL INDIVIDUAL
- GENDER ISSUES IN COMPUTING AND TELECOMMUNICATIONS
- THE HAND THAT WIELDS THE GAVEL
- THE POWER, POLITICS AND PROMISE OF INTERNETWORKING
- INTERNATIONAL DATA FLOW

The conference will also offer a number of in-depth tutorials on subjects including:

- Information use in the private sector
- Constitutional law and civil liberties
- Investigating telecom fraud
- Practical data inferencing
- Privacy in the public and private workplace
- Legal issues for sysops
- Access to government information
- Navigating the Internet

INFORMATION

For more information on the CFP'93 program and advance registration call or write to:

CFP'93 INFORMATION
 2210 SIXTH STREET
 BERKELEY, CA 94710
 (510) 845-1350
 cfp93@well.sf.ca.us

Copyright © 1993 by Tony Reveaux. All rights reserved.

PERFORMANCE • RELIABILITY

SATISFACTION • PERFECTION

R-COMPUTER

QUALITY SYSTEMS THAT HAVE STOOD THE TEST OF TIME

FREE COMPUTER TRAINING WITH SYSTEM PURCHASE

486-33 W/128K CACHE 130MB HARD DRIVE SVGA SYSTEM

- 486-33MHZ W/128K CACHE CPU
- 4MB RAM
- 130MB MAXTOR HARD DRIVE
- VIEWSONIC SVGA MONITOR
- SVGA CARD
- 1.2 & 1.44MB FLOPPY DRIVE
- COMPLETE SYSTEM WITH DELUXE CASE AND KEYBOARD

\$1653

486-50 W/256K CACHE 170MB HARD DRIVE SVGA SYSTEM

- 486-50 W/256K CACHE CPU
- 4MB RAM
- 170MB MAXTOR HARD DRIVE
- VIEWSONIC SVGA MONITOR
- SVGA CARD
- 1.2 & 1.44MB FLOPPY DRIVE
- COMPLETE SYSTEM WITH DELUXE CASE AND KEYBOARD

\$1898

ORCHID VESA LOCAL BUS 486-50

W/256K CACHE 213MB HARD DRIVE SVGA SYSTEM

- 486-50 W/256K CACHE CPU
- W/ORCHID MOTHERBOARD
- 4MB RAM
- 213MB MAXTOR HARD DRIVE
- VIEWSONIC SVGA MONITOR
- FAHRENHEIT™ 1280 LOCAL BUS VESA
- 1.2 & 1.44MB FLOPPY DRIVE
- COMPLETE SYSTEM WITH DELUXE CASE AND KEYBOARD

\$2287

486-66 W/256K CACHE 213MB HARD DRIVE SVGA SYSTEM

- 486-66 W/256K CACHE CPU
- 4MB RAM
- 213MB MAXTOR HARD DRIVE
- VIEWSONIC SVGA MONITOR
- SVGA CARD
- 1.2 & 1.44MB FLOPPY DRIVE
- COMPLETE SYSTEM WITH DELUXE CASE AND KEYBOARD

\$2053

486-25 130MB HARD DRIVE SVGA SYSTEM

- 486-25MHZ CPU
- 4MB RAM
- 130MB MAXTOR HARD DRIVE
- VIEWSONIC SVGA MONITOR
- SVGA CARD
- 1.2 & 1.44MB FLOPPY DRIVE
- COMPLETE SYSTEM WITH DELUXE CASE AND KEYBOARD

\$1443

386SX-25 80MB HARD DRIVE VGA SYSTEM

- 386SX-25MHZ CPU
- 1MB RAM
- 80MB MAXTOR HARD DRIVE
- VGA MONO MONITOR
- 1.2 OR 1.44MB FLOPPY DRIVE
- COMPLETE SYSTEM WITH DELUXE CASE AND KEYBOARD

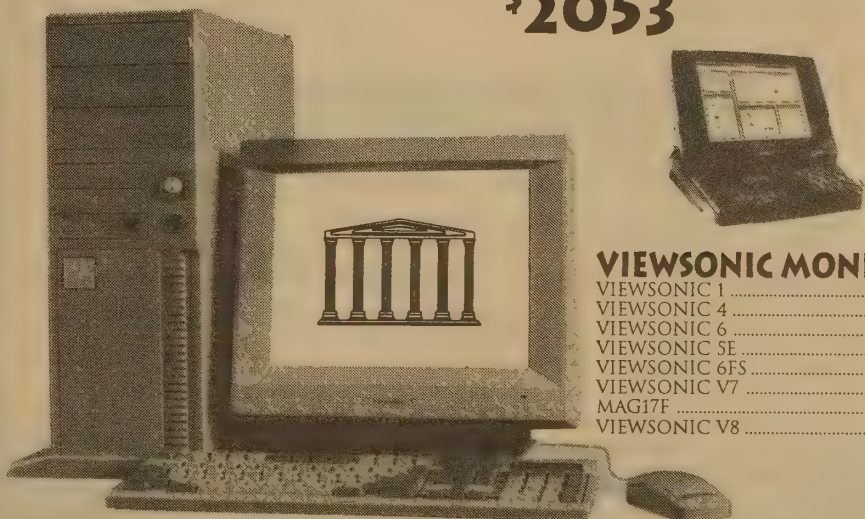
\$789

See The Hot
New Notebooks
From **BCC**

AVANTI 486 SLC

- 486SLC/25 MHZ PROCESSOR
- 80MB HARD DRIVE
- FAX, SEND AND RECEIVE MODEM
- DOS, WINDOWS, & CARRYING CASE
- HIGH CONTRAST 10" LCD DISPLAY

\$2239



VIEWSONIC MONITORS

VIEWSONIC 1	\$240
VIEWSONIC 4	305
VIEWSONIC 6	355
VIEWSONIC SE	410
VIEWSONIC 6FS	595
VIEWSONIC V7	995
MAG17F	1140
VIEWSONIC V8	1580

Color Model Available! VIDEO GRAPHICS

ALLCUMOS 256K	\$34
TRIDENT 9000	45
TRIDENT 8900	65
DIAMOND SPEEDSTAR 24X	169
DIAMOND SPEEDSTAR 24	149
ORCHID PRO IIS	140
DIAMOND STEALTH	179
FAHRENHEIT 1280	179

LIFETIME LABOR WARRANTY PERSONALIZED SERVICE

R-COMPUTER

SERVING YOU FOR 7 YEARS

(510) 798-4884

30 GOLF CLUB ROAD, PLEASANT HILL, CA 94523

Concord Ave	680
	Sun Valley
	Contra Costa Blvd
	☒ Golf Club

LANtastic Authorized Dealer

PRICES SUBJECT TO CHANGE W/O NOTICE.

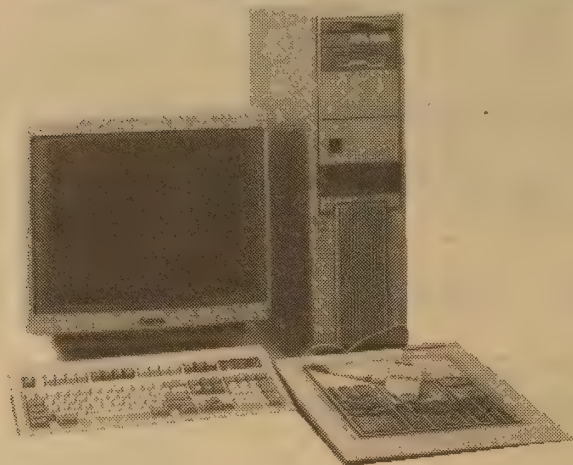


LANtastic by ARTISOFT

LAN TIMES
READERS
CHOICE
1992

PC
MAGAZINE
EDITORS'
CHOICE
Apr 14 1992
LANtastic Version 4.10

SYSTEMS



CAD Workstation

- Intel 80486DX2/66MHz CPU. 8MB memory, 256KB Cache memory.
- TEAC 1.2MB & 1.44MB FDD, 210MB IDE Hard Disk Drive.
- 2S / 1P ports, 101 Keyboard, Calcomp 12X12 digitizer, DOS 5.0.
- Full size vertical case, 300W P.S, Heat-Sink, Dual Fan.
- #9GXI TI.34020 graphics card (Level 23).
- 1280 X 1024 resolution with 60 or 72 Hz refresh rate.

\$3,295

Interactive Multimedia

- Intel 80486DX/33MHz CPU. 8MB memory, 256KB Cache memory
- TEAC 1.2MB & 1.44MB FDD, 210MB IDE Hard Disk Drive.
- 2S / 1P ports, Keytronics 101 Keyboard.
- CD ROM, Sound Blaster Pro, Video Blaster, Speakers.
- MS DOS 5.0, Windows 3.1, Video for Windows.
- Diamond 24X SVGA, CANON RC 250 Video Camera.
- Mid size vertical case, 250W Power Supply, Mouse.

\$3,195

Drawing Manager

- Intel 80486DX/33MHz CPU. 8MB memory, 256KB Cache memory
- TEAC 1.2MB & 1.44MB FDD, 200MB IDE HDD, Mouse
- 2S / 1P ports, 101 Keyboard, Desktop case, DOS 5.0, Windows 3.1
- 1280X1024 Graphics card (Tracer 1280)
- Raster background & editing in AutoCAD
- Large size scanner (up to E size) and high resolution (up to 600 dpi)
- Large size digitizer (up to 36X44)

\$Call

True Color System

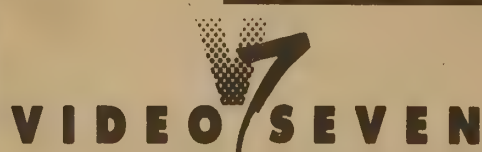
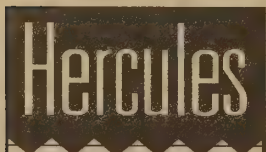
- Intel 80486DX2/66MHz CPU. 8MB memory, 256KB Cache memory.
- TEAC 1.2MB & 1.44MB FDD, 200MB IDE HDD, Mouse
- 2S / 1P ports, 101 Keyboard, Vertical case, Windows 3.1, DOS 5.0
- ScanMaker II up to 1200 dpi, 24-bit color flatbed scanner.
- #9GXI TC(L29) TI 34020/40MHz graphics processor based card.
- 1280X1024 resolution 64K, 1024X768 24-bit color

\$4,395

Options for Above Systems

- 14-37 " monitors, Pen Plotters, Electrostatic Plotters, Inkjet Plotter.
- 24 Bit graphics card, SONY Video Deck, DAT, Optical Drive.
- Sound board, Dye Sublimation Color Printer, Image Capture Board
- 24 Bit Color Scanner, A-E size Digitizer / Scanner, Film Recorder.

Please, Call for other Products



CAD / GRAPHICS



#9 GXI TC (L29)

1280X1024, Real Color

- TI34020/40MHz graphics card
- 1024X768, 16.7 mil color
- Built-in VGA or Pass through
- 2048X2048 virtual resolution
- Special 5 years warranty \$1,495



Targa+ / ATVista

The Best Multimedia.

- TARGA+ 16 / 32 / 64
- ATVista 1M / 2M / 4M
- Bravado
- TIPS
- Truevision 1024 / 32 \$Call



MG3D / MG3D Ultra

MG 3D

- 1024 X 768, 4096 Colors. ISA
- 3D Dynaview for AutoCAD
- MG 3D Ultra
- 1280 X 1024, 16 million Col. EISA
- 3D Dynaview for AutoCAD \$Call



ScanMaker

ScanMaker II

- Flatbed 24 bit color scanner
- 1200 dpi resolution \$895
- ScanMaker 1850
- 35mm Slide 24-bit film scanner
- 1850 x1850 dpi resolution \$1,495



2400dpi printing

Highest Quality Output

- For HP Laser II, III, Canon
- 256 gray level printing
- 35 PostScript-matched fonts
- 2400dpi graphics, 1200 dpi text
- Windows, Dos driver \$1,895



Ink Jet Plotter (V50)

20X faster than Plotter

- 360dpi A-C size, Inkjet plotter
- Up to 20 times faster than plotter
- Emulates HPGL/2, HPGL, XL24
- Single or rollfeed (Option) \$1,595



SNAP Plus

NTSC ↔ VGA

- Overlay NTSC and VGA graphics
- 640x480, 24-bit. Capture in real time
- 800x600, 64K. col. display
- NTSC, PAL input / output.
- Windows, ADI drivers \$895



20" Color Monitors

CT 20A

- SONY Multimode Trinitron Tube
- Up to 1600X1280 resolution.
- CN 20A \$2,095
- 1280 X 1024 Non-interlaced
- OCLI Shadowmask \$1,495

MONITORS

37" Mitsubishi XC3725	\$Call
33" Mitsubishi XC3315, 3715	\$Call
21" NEC 6FG	\$2,495
21" Nanao F750i	\$2,195
21" Hitachi Accuvue	\$2,495
21" IDEK 5221	\$2,095
20" Ikegami CT20A(Trinitron)	\$2,095
20" Ikegami CN20A	\$1,495
20" Nanao T660i	\$2,495
20" Viewsonic 8	\$1,695
20" NEC 5D	\$1,595
20" SONY 1936	\$2,395
20" Mitsubishi 7955	\$1,995
20" Hitachi CM2085	\$1,395
20" Sampo AlphaScan	\$1,145
17" Seiko 1760	\$1,095
17" NEC 5FG	\$1,495
17" Nanao T560i	\$1,795
17" Nanao F550i	\$1,095
14" Sampo Alphascan	\$395

GRAPHICS CARD

RASTEREX Tracer 1280	\$2,695
SPEA 1280	\$1,695
#9GXI TC L29	\$1,495
#9GXI L23 / 25	\$1,095 / 1,395
#9GXE L11 / 12	\$595 / 695
Artist XJS 12-16	\$2,195
Artist XJS Lite	\$1,495
Artist Winsprint 100+	\$445
Artist Winsprint 150+	\$545
Hercules GS Gold 16	\$395
Hercules Graphite	\$345
Matheus 1104+16	\$995
Matheus 1104+256	\$1,095
Matrox 1024	\$Call
Matrox Impression AT	\$Call
Matrox MG 3D Ultra	\$Call
Vector 1280(for Fix freq.)	\$595
Stealth 24X V-Local Bus	\$195
ATI Graphics Ultra Pro 2MB	\$595
ATI Graphics Ultra + 2MB	\$495

PLOTTERS

Calcomp 2036(A-E)	\$4,095
Calcomp 2024(A-D)	\$3,195
HP Design Jet (A-E)600dpi	\$7,095
HP DesignJet (A-D)600dpi	\$5,995
HP 7599B (A-E)	\$7,695
HP 7596C (A-E)	\$6,695
HP 7595C(A-E)	\$5,295
HP 7576A(A-E)	\$4,195
HP 7575A(A-D)	\$3,195
HP 7570A(C-D)	\$2,695
HP 7475A(A-B)	\$1,495
H.I. DMP162(A-E)	\$3,695
H.I. DMP161(A-D)	\$2,895
H.I. JetPro(A-C) V100	\$1,895
Enter SP600(A-B)	\$695
Mutoh XP-501(A-D)	\$4,195
Roland GRX300(A-D)	\$3,445
JDL 850XP-1M(A-C)	\$2,895
AMT Accel244(A-C)	\$895
PacificData InkJet(A-C)	\$1,195

DIGITIZERS

Calcomp 44X60	\$1,895
Calcomp 36X48	\$1,695
Calcomp 24X36	\$1,495
Calcomp 18X24	\$1,295
Calcomp 12X18	\$645
Calcomp 12X12(P.Sen)	\$495
Calcomp 12X12	\$289
Calcomp 6X9(P.Sen)	\$450
Summa S. MG2 42X60	\$3,595
Summa S. MG2 36X48	\$2,995
Summa S. MG2 24X36	\$2,595
Summa S. MG2 17X24	\$2,195
Summa S. III 12X18	\$595
Summa S. III 12X12	\$315
Kurta XLC 24X36	\$1,295
Kurta XLC 18X24	\$1,095
Kurta XLP 12X18	\$535
Kurta XLP 12X12	\$285
Kurta Is / One 12X12	\$345
Wacom 12X12	\$695



ELECTRONICS

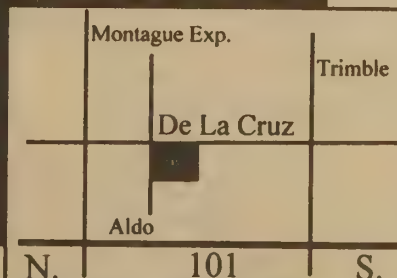
The house of CAD & Graphics Equipment

Mon - Fri : 9 - 7 Sat : 10 - 4

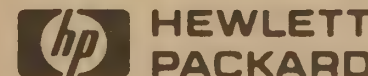
3448 De La Cruz Blvd., Santa Clara, CA 95054

Phone (408)727-9986 Fax (408)727-7687

- * Price subject to change without notice
- * Not responsible for typographical errors
- * All trademarks belongs to their respective companies



Free Technical Support, New Low Price !



Clip Media, Copyright, And Consumers

CD-ROM Creates Market Opportunities For Mass Consumption Of Digital Clip Media, But Mass Markets Require Massive Adjustments

BY MATTHEW LEEDS

The acceptance of CD-ROM technology by the home and small business market has triggered an explosion in digital clip media.

CD-ROM provides the low cost of duplication and high storage capacity needed for mass-market digital clip media. This low cost of entry has allowed individuals and companies that earlier sold data through specialized channels (stock photo houses, needle drop music vendors, etc.) to attempt to move their goods directly into the hands of consumers. This however, raises some difficult questions.

NEW SOLUTIONS, NEW PROBLEMS

Specialized-channels customers were sophisticated buyers who understood pricing, quality, and copyright restrictions. Prices of several hundred to several thousand dollars for a single image or sound track were normal; quality was generally very high; and copyright restrictions were well understood and negotiated for specific usage.

The consumer market expects to pay less than a dollar per image or audio track, often has no idea how to tell the difference between great and only so-so quality, and has little or no understanding of copyright restrictions and copyright law.

This has resulted in a tremendous variety of experiments in new products for consumers. Traditional media providers are attempting to sell the same products they sell to the high end, while pricing for the consumer market. To justify the price difference, they adjust the quality and/or rights provided. Other providers, with no high-end market to protect, are much more generous with both the quality they provide and the rights they license. It is worth noting that some low-cost products are also low-quality. With so many new providers flooding the mar-

ket, it's tough to sort out what's worthwhile and what isn't.

Quality is based on a few factors: the quality of the process used to digitize the original media, the size of the sampled data file, and the quality of the original media. A 35mm slide digitized with a cheap scanner (or a poorly adjusted one) will have a reduced color fidelity and dynamic range. An out-of-focus or poorly exposed original will never provide a quality digital file. The same applies to audio and video data.

Assigned rights range all over the place. Some providers allow any usage; some require you to credit the original artist and/or provider; some allow non-commercial usage only (a vague limitation in some cases); some limit usage to non-broadcast, or, in print media, to a specific print run size.

While getting clip media in digital form alleviates the need to own digitizing hardware, the ease with which you can locate a specific file on a CD depends on the interface provided with the clips. Some companies have made the investment in programming a decent, sometimes excellent interface. Others offer only a printed listing of the contents.

CLIP MEDIA SAMPLER

I collected a representative sampling of current digital clip media products and spent some time exploring their interfaces (or lack thereof), checking out their quality, and reading up on their license restrictions. The results are laid out below, both in the table provided and summarized in text. Recent developments in QuickTime will improve the QuickTime clips, and it's possible that announced low-cost 16-bit audio hardware for the Mac will also improve audio samples.

• **Mr. Sound Effects** comes on four floppy disks. It has no interface for easily playing each sound, but it includes a custom version of Sound Master, an INIT that lets you assign sound effects to system events. (For example, you can assign a toilet flush sound to a disk eject—something

The consumer market expects to pay less than a dollar per image or audio track, often has no idea how to tell the difference between great and only so-so quality, and has little or no understanding of copyright restrictions and copyright law.

RESOURCES:

Mr. Sound Effects & Music Bytes
Prosonus
11126 Weddington
North Hollywood, CA
91601
1-800-999-6191

WraptureReels One
Available from Educorp

MediaClips
Aris Entertainment
12162 SW Scholls
Ferry Rd., Ste. 107
Portland, OR 97223
(503)520-1234

Nautilus
7001 Discovery Blvd.
Dublin, OH 43017
(614)766-3150

that gets old fast.) The sound samples are in SoundEdit format, and no conversion utility to SND or AIFF is provided, nor is a standalone sound player utility. All samples are 8-bit.

• **Music Bytes** comes with an excellent interface, Media Librarian. Media Librarian locates and plays samples, provides information about each, and lets you save samples to your hard drive. Samples are provided in 8-bit AIFF, MIDI, and CD Audio formats. There are 27 instrumental tunes in 60-, 30-, 15-, and 5-second versions, and 107 sound effects.

• **WraptureReels One** uses the same high-quality interface that premiered with the Wraptures One still-image CD. The QuickTime movies on this CD are 32-bit, full screen, 30-frame/sec, and most loop seamlessly. They also come in a smaller version for previewing. They are designed for output to video (frame by frame), use as texture maps in full-screen renderings, or as animated backgrounds. Some include static or animated masks. Also included are sound effects and still backgrounds. A basic QuickTime movie player/editor is included as is a QuickTime to PICT converter.

• **MediaClips** is a collection of stills, QuickTime movies, and audio and sound effects. It comes with a good, useful interface; the clips are generally of good quality (sometimes excellent—I use

Copyright © 1993 by Matthew Leeds. All rights reserved.

Multimedia Solutions Direct from The Experts

SuperVIA & PhotoFinish

NOW supports
Microsoft Video
for WINDOWS

Video
1991 HOTTEST
PRODUCT

PhotoFinish

\$429

Featuring MovieMaker - JPEG Compression
Capture Color Video Images in Real Time (640 x 480)

The SuperVIA can furnish the non-technical user with super color image capture capability in real time, 1/60th or 1/30th of a second, and display them on VGA, up to 640x480 resolution in 256 or 32K colors. Featuring Multiple Sequential Frame Storage, the SuperVIA can digitize a series of images in real time and save them to FLC or FLI Animator files. SuperVIA is a powerful tool for animation, bundled with a full version of PhotoFinish. PS/2 MicroChannel and PAL version available.

File Format: GIF, TIFF, PCX, CUT, IMG, TGA, FLI & FLC, JPEG.
Input: Composite NTSC, S-Video, Analog RGB.

QUICKVIA Digital Video

QUICKVIA AVI Movie Recorder

The most affordable solution to produce full-motion AVI (MS Video for Windows) movies right on your desktop. Real time capture at up to 30 frames per second digital video window.

\$289

- Complete, single-slot digital video capture solution
- Video capture in varying window size: 320x240/160x120/80x60
- Stores digital video on ordinary hard disk
- Support for AVI and MCI interface in MS Windows.
- Captures digital video as 16-Bit RGB in real time to disk.
- Composite, S-Video input for NTSC and PAL (optional).

Digital Video Software

The best way to express your ideas is to show them in action, and the strongest way to do that is with Video for Windows. Capture live video and sound with our QUICKVIA video board and SONIA MCI sound board, and show them right from your PC, with Video for Windows without any specialized video hardware.

\$CALL

Still Video Camera

Canon XAPSHOT

State-of-the-art Still Video Camera converts images to electromagnetic impulses for recording and direct display on any NTSC type TV or monitor. With the use of Video Floppies instead of film, there is no waste, no waiting.



RC-250 **\$455**
RC-360 **\$CALL**
RC-570 **\$CALL**

Media Master

Authoring Software

Multimedia authoring made easy! Create powerful interactive or self running multimedia applications combining text with still images, sound, animation and live video without the use of complicated programming and scripting languages. Media Master's innovative HyperButton Authoring Technology allows even novice computer users to create and distribute Royalty Free interactive applications. The total solution for educational, medical & industrial training, corporate presentations, & other A/V applications.

\$689

ImageQ for Windows

Professional Presentation Software

If you need to show true-color images for your technical seminars or client presentations, use ImageQ for Windows to communicate your visuals with the clarity they deserve. Whether it's a simple slide show or a fully interactive presentation, use the programmability and quality of ImageQ to display your 24-bit Targa, BMP and Tiff files. Visual slide sorting, on-the-fly conversion of true-color images to SuperVGA. Automatic creation of presenter notes and viewer handouts. Support for all sound boards compatible with MCI, and extended MCI functions for video.

\$295



JOVIAN MultiMedia Series

VideoScan

The flicker-free VideoScan encoder takes high quality graphics from any VGA system and enables you to produce them in superb quality video. The VideoScan supports all IBM standard modes up to 640x480 resolution with any number of color for NTSC video. The VideoScan is the ideal encoder for Windows or graphics applications with simultaneous display on both VGA and TV monitors. PAL version available.

Input: Analog RGB signal from VGA display adapter (31KHz), 9V-DC power adapter.
Output: S-Video, composite video, video RGB (15KHz), and VGA loop-thru.

Your PC-Video Link

Affordable palmtop size
Scan Converter

\$289

GALAXY MULTIMEDIA UPGRADE KIT



High performance CD-ROM drive, NX PRO sound card, Speakers, Microphones. Free software: Guinness of world records, MCMillian dictionary, World Atlas, Windat, Jukebox, Win-Mix, Monologue, Sound Tracks, Galaxy Master.

\$469

SOUND GALAXY NX PRO

The Only Stereo Sound Card with 4 Sound Standards

Support 4 sound standards: Sound Blaster Pro 2, AdLib, Covox Speech Thing, and Disney Sound Source. 20 voices-4 operators stereo FM synthesizer with built-in midi interface. Support recording from stereo mic, line-in and CD-Audio and stereo digital/analog mixer. Built-in AT bus CD-ROM interface with option for SCSI interface. Bundled software included: Monologue, Windat, SoundScript, Jukebox, CD-Player, Sound tracks and Galaxy Master.

\$145

Toshiba 3401

The new Toshiba CD ROM drive will give your CD based multi-media application the speed that it needs.

- 200 ms Access Time
- 330 KB Data Transfer Rate

Best Price **\$CALL**

Sony CDU-31A

Low cost Photo-CD compatible
CD-ROM drive

- 490 ms access time
- 150 KB data transfer rate
- 64 K buffer

Price includes controller

\$299

Imaging Video Camera

JVC TK-1070U

The 1070U uses 2/3" CCD device with 768H x 492V elements; with the G stripe R/B filter, makes color reproduction extremely accurate & give a horizontal resolution of 480 lines. With one touch, it converts both RGB & Y/C separate signals for outputting. 6X Zoom lens, aperture F-1.2. Please specify Auto or Remote control options.



Auto Focus Lens included

\$1949

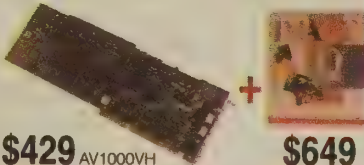
VIGA+ PowerPak

"100% TARGA+ Clone... an excellent low cost alternative." combined with T-Tools the power utilities for the classic TARGA users. The PowerPak performs chroma keying, video grabs, Multiple Frame Capture, Strobe EFX, Print to Laserjet, and much more. The PowerPak comes with a collection of 28 utilities and a VIGA+ 16/32 Targa compatible board. 64+ and PAL avail.

Input: NTSC color composite video, analog RGB, or S-Video signal.
Output: S-Video, analog RGB, or composite video signal.

\$CALL

Digital Desktop Presentation



\$429 AV1000VH

\$649

The AV1000VH is a VGA adapter combo allowing flicker-free TV output. The board is comprised of a Tseng Labs VGA chip and a RamDAC allowing 32k color display for Windows and other applications supporting true-color display. Composite video, S-Video and RGB are outputs from this board. Digital Media Labs combines it with ImageQ presentation software to furnish the modern desktop presenter with the ultimate multimedia tools.

SONIA HI-FI AUDIO BOARD



MCI Ready

\$389

For real CD quality - at very affordable cost - The Sonia audio processor is a digital Stereo Recorder-Playback, with 4 operator FM synthesizer for ADLIB compatibility, MIDI and mixing output controls. The Sonia design is based on a 10 MIPS digital signal processor (DSP) to digitize Stereo audio at 16-Bit resolution with software selectable sampling rates of 16, 22, 32, 44.1, 48 KHz to provide audio comparable to CD-Audio and DAT. Voyetra and MCI drivers are included for midi compatibility under Windows 3.X.

MICROSOFT SOUND SYSTEM

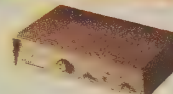


MCI Ready

\$205

Microsoft Windows Sound System sampled in both 8 and 16-bit modes. Six windows applications are included: Quick Recorder, with ability to link audio icons to OLE-aware applications. Voice Pilot lets you control the machine by voice command; Proof Reader for Microsoft Excel and Lotus 123; Sound Finder converts AIF, SND, VOC file formats to WAV.

VINPLUS



Convert Computer Image
to TV Video

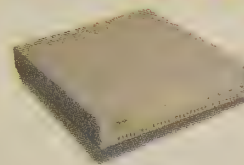
\$189

The VINplus encoder box is the perfect VGA accessory. It converts the signal from your VGA or SuperVGA computer display (up to 640x480 resolution with 256 colors) into a professional TV video signal. PAL version available.

Input Signal: Analog RGB signal from VGA display, or video RGB.
Output Signal: Composite, S-Video, 15.75KHz multisync VGA output.
Size: 6.75W x 4.38D x 1.5H

GENIE Scan Converter

Featuring "Full Underscan" Video

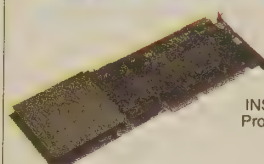


\$1150

The Flicker Free Genie converts standard VGA or Mac graphics from your computer to a Composite, S-Video or RGB video signal in either NTSC or PAL (optional). Genie requires no software or special hardware to be installed, and allows simultaneous display on your computer screen and video monitor. Genlock capable. Automatic detection IBM or MAC.
Size: 12.25W x 14.75D x 2.5H

Desktop Video

Video Genlock Overlay



\$629
PRO-CG

INSCRIBER or PrimeTime
Professional titling software
from \$395.00

Digital Media Labs PRO-CG video overlay solution, bring to the desktop videomaker professional quality video titling with superb quality true-color anti-aliased text, and video effects. The desktop video package allows crisp, text to be merged with generated graphics, captured images or live video, or sequence your screens with credit rolls, crawls, and variable transitions. The hardware features overlay with Genlock, broadcast quality composite, S-video output. Optional add-on for Betacam (YUV) output. Call us for a full line of INSCRIBER professional titling software.

Digital Desktop Video



\$CALL

Computer Based Training
Presentations
Teleconferencing
Video E-mail

MediaSpace
Digital Media adapter
MediaSpace is an add-in card that provides real-time, high quality compression of video and audio. Digitizes real-time video and audio up to DAT quality. Provides outstanding picture quality at any size. Video for Windows (AVI) conversion software now available with MediaSpace.



To order, call **510-438-9046**

47913 Fremont Blvd. FREMONT, CA 94538

Information: 510-438-9046
Fax: 510-438-9046

Mon - Fri 10am - 6pm

Saturday 10am - 5pm

TERMS AND CONDITIONS

Multimedia & beyond

one as my desktop background), and come in a variety of collections: Wild Places, Business Backgrounds, Money, Island Designs, and others. The pricing of MediaClips collections makes them an excellent choice for on-screen or small, undemanding print applications. The still images are available in 8- and 24-bit resolution; the sound samples are 8-bit 22KHz.

• While not strictly a clip media library, *Nautilus*, a magazine-like subscription CD, does

can adjust, this CD offers quite a bit of utility with good keyword searches. This disc is bundled with VideoShop, a QuickTime editing application.

• Ever the pioneers, BMUG jumped on the first release of QuickTime and produced a CD full of short clips and stills for those without digitizing hardware to experiment with. Its HyperCard interface is slow, the clips and stills mostly of moderate quality at best; this is best suited to its

original purpose and not as a source of professional-quality clip media.

• A perfect example of specialized imagery, *SKY: Volume One* is a collection of one hundred stills of sky images: striking cloud formations, sunsets, and the like.

Each image was scanned on a drum scanner at 2000dpi, then JPEG compressed. These images would be suitable for printing, for example at 133 lines at 10 inches in size. The CD includes a JPEG decompression utility. No preview interface is included, but a printed sample of each im-

age is included.

• *Digital Photographics* takes a more scattershot approach to image selection, but also offers excellent image quality. Both screen-resolution and high-resolution versions are provided, a HyperCard interface is provided, and an educa-

tional "Electronic Photography Resource" HyperCard stack is supplied. A Try-Out version of Photoshop is also included. The dynamic range on these images is excellent.

• *World Travel Europe* is a collection of travel photos. The interface is marginal at best, but the image quality is good, with most images in the 1.5 to 2.5MB size. There are, however, a considerable number of restrictions placed on the use of the images, a reflection of the source—two commercial stock photographers who, I suspect, are more interested in preserving their stock prices than making it convenient for consumers to use their images. This is just one CD from a series by this publisher; the rights vary depending on the source of the originals. The restrictions may be less onerous on other collections.

• *Rick Doyle* is a sports photojournalist whose work has appeared in *Sports Illustrated*, *Surfing Magazine*, and other publications. His *Digital Imagery Volume 1* is a collection of water sports shots. The browser interface provided with the images is minimal, but does show thumbnails. The images are provided in 24-bit color and 8-bit gray scale. File size varies from 1 to 4MB, and most images are pretty good. The only restriction on usage is the requirement for an artist's credit, a reasonable request.

• *PhotoDisc* is a refreshing balanced approach from 21st Century Media. Using images licensed from stock houses, a reasonable license, with an excellent interface and great image quality (maximum about 18MB), this is a pricey but usable product. The image files are large enough to allow 5 x 7 printing at production standards, and with hundreds of images per CD you have a decent variety to search through. The interface offers keyword searching, image information, and copying. It's worth noting that Kodak has licensed this interface.

• Sometimes one has to adjust one's plans based on experience. Such was the case with *D'pix Folio 1*. This three-CD collection of 22MB high-

While getting clip media in digital form alleviates the need to own digitizing hardware, the ease with which you can locate a specific file on a CD depends on the interface provided with the clips. Some companies have made the investment in programming a decent, sometimes excellent interface. Others offer only a printed listing of the contents.

provide still, audio, and QuickTime clips each month. The quality and licensing varies, but there is usually useful material every month. In addition, there is a variety of software utilities, articles, and other items of interest.

• The *Image Bank* CD is one example of an existing image provider's attempt to straddle the fence on selling images. Their license allows only for noncommercial in-house use, essentially "for position only" usage. For this they expect you to pay? While the image quality is sometimes good, it tends to vary, and their interface is decidedly strange. They create a virtual desktop and redesign the Mac interface. If you

RESOURCES

Image Bank
Diva Corp.
222 Third St.
Cambridge, MA 02142
(617)491-4147

BMUG TV-ROM
BMUG
1442A Walnut St., #62
Berkeley, CA 94709
(510)549-BMUG

SKY: Volume One
CD Folios
6754 Eton Ave.
Canoga Park, CA 91303
1-800-688-3686

Digital Photographics
Husom & Rose
Photographics
1988 Stanford Ave.
St. Paul, MN 55105
(612)699-1858

Europe Travel & Digital
Video Library
Available from Educorp

Rick Doyle Digital
Imagery
PO Box 599
Solana Beach, CA 92075
(619)481-6792

PhotoDisc
21st Century Media
2013 4th Ave., 2nd Floor
Seattle, WA 98121
1-800-528-3472

Folio One
D'pix
PO Box 572
Columbus, OH 43216
1-800-238-3749

Vintage Medley
Seattle Support Group
422 4th Ave. SE
Pacific, WA 98047
1-800-995-9777

CLIP MEDIA TITLES

Publisher and Product	Audio	Stills	QT Video	List Price	Interface	Quality	License
Mr. Sound Effects	✓			\$29.95	Poor	11 & 22KHz	No restrictions
Music Bytes	✓			\$99.95	Very Good	22KHz	No restrictions: notify usage, provide credit
WraptureReels One	✓	✓	✓	\$199.00	Excellent	30fps Excellent	No restrictions
MediaClips	✓	✓	✓	\$39.95	Very good	1MB Good	Credit artist, credit Aris
Nautilus	✓	✓	✓	\$137.40/yr	Good	Varies	Varies—usually none or credit artist
Image Bank	✓		✓	\$599.00	Good but stra	Varies	Noncommercial in-house
BMUG's TV-ROM		✓	✓	\$50.00	Fair	1MB Fair	Credit artist, credit BMUG
Sky: Volume One		✓		\$129.00	Printed index	10-15MB Very Go	No restrictions
Digital Photographics		✓		\$125.00	Good	8MB Excellent	No restrictions
Europe Travel		✓		\$129.95	Fair	1.5-2.5MB Good	Many restrictions
Rick Doyle Digital Imagery—Vol 1		✓		\$79.00	Fair	1-4MB Good	Credit artist
PhotoDisc		✓		\$395.00	Very Good	8MB-18MB Good	Not used in product for sale
Folio 1		✓		\$499.95	Printed index	22MB	No restrictions
Vintage Medley		✓		\$79.95	Poor	700K-9MB Varie	No restrictions
Bare Assets			✓	\$179.00	Good	Good—Both CD an	No usage allowed
Digital Video Library			✓	\$149.95	Fair	Varies	Non-broadcast QT, noncommercial printing
AdClips—Videotape			✓	\$299.00	Printed index	Good for VHS	Unlimited non-broadcast

Note: All licenses restrict redistributing contents as clip art or as part of a clip art collection.

res and medium-res stills was originally sold with only the medium-res images freely available; a fee was required to "unlock" each high-res image. That approach apparently did not yield sufficient sales, and has now been modified. All of the high-res scans are "unlocked" in the current offering. The upside is that you get a tremendous selection of images of excellent quality; the downside is you are still stuck using the complicated retrieval scheme originally de-

signed to "lock" images. The images are compressed and must be first copied in compressed form, then decompressed. This takes a lot of disk space, but the results are worth it.

• **The Vintage Medley** is a collection of nature and outdoor images in three resolutions. The interface only offers thumbnail previews and full image displays, no searching or automatic copying. The image quality varies quite a bit. Some images are sharp and well exposed, while

RESOURCES:

Bare Assets
Space Coast Software
3128 Lake Washington
Rd., Ste. 244
Melbourne, FL 32934
(407)242-2040

AdClips
Mediacom
12701 Cottage Mill Ter.
Midlothian, VA 23113
(804)794-0700

others look like snapshots.

• The home video rental market took off when adult films became available. With that in mind I decided to take a look at one offering in this genre. **Bare Assets** would fall into the "R" rating category. It's a mix of QuickTime and still images, about the *Playboy*-like level. Two versions of QuickTime movies are provided, one optimized for playback from CD, the other for playback from a hard drive if you've got about 40MB of free space per movie. Other publishers are providing harder stuff if your tastes run in that direction. Given the cost, I suspect videotape has nothing to fear. Note that no reproduc-

Single Source.

- VIDEO CASSETTE MASS DUPLICATION
- WORLD TELEVISION STANDARDS CONVERSION
- MACROVISION[™] VIDEO ANTI-PIRACY PROTECTION
- FILM-TO-TAPE TRANSFER VIA RANK CINTEL
- OPTICAL LASERDISC RECORDING (RLV)
- PACKAGING AND DISTRIBUTION, INCLUDING LABELING AND SHRINK WRAP
- FULFILLMENT SERVICES

DINER+ALLIED
FILM & VIDEO SERVICES

San Francisco — 620 3rd Street, San Francisco, CA 94107-1902 • Tel: (415) 777-1700 • FAX: (415) 957-1842
Detroit — 7375 Woodward Avenue, Detroit, MI 48202-3121 • Tel: (313) 871-2222 • FAX: (313) 871-5907
Chicago — 1322 W. Belmont Avenue, Chicago, IL 60657-3285 • Tel: (312) 348-0373 • FAX: (312) 348-5669
Dallas — 6305 N. O'Connor Road, Suite 111, Bldg. Four, Irving, TX 75039-3510 • Tel: (214) 869-0100 • FAX: (214) 869-2117
Orlando — 4364 35th Street, Orlando, FL 32811-6502 • Tel: (407) 649-0008 • FAX: (407) 649-9005
Washington, DC — 5840 Kirby Road, Clinton, MD 20735-1362 • Tel: (301) 297-7600 • FAX: (301) 297-4250
Knoxville — 370 J.D. Yarnell Industrial Parkway, Clinton, TN 37716-0460 • Tel: (615) 457-7772 • FAX: (615) 457-7799

A 35mm slide digitized with a cheap scanner (or a poorly adjusted one) will have a reduced color fidelity and dynamic range. An out-of-focus or poorly exposed original will never provide a quality digital file. The same applies to audio and video data.

tion rights are provided.

• QuickTime clips on the **Digital Video Library** are of a more sedate nature, ranging from sports, locations, cities, places, and other generic categories. The preview interface is marginal, and the quality of the clips varies greatly. All are limited by QuickTime's data rate, and are designed for on-monitor display only. Since the license agreement prohibits broadcast usage, this is just as well. And since commercial usage is also prohibited, these clips might only serve as place holders.

• Finally I took a look at a videotape of short clips called **AdClips**. Licensed for non-broadcast usage, these clips do avoid being outdated technology-wise by advances in digitizing, but require you to have your own digitizing hardware. The publisher plans to produce a CD version now that QuickTime 1.5 has shipped with the new video compression codes. These clips are available in other higher-quality video formats as well. ■

Artware

Intelligent, Responsive Works Of Art Are Changing Our Ideas About Art

BY JUDY MALLOY

ArtEngine, by computer artist Fred Truck, integrates material that ranges from Mickey Mouse icons to the encounter of an animated Napoleonic tank with a Chinese persimmon. Like Truck, a growing number of artists and writers are moving into cyberspace—beyond the production of art that sits static on the computer screen or is printed out and hung on walls. "Artware," intelligent, responsive software art, runs in real-time. In the future, it won't be found primarily in museums or galleries. Instead, as television does, artware will run in family living rooms and dens.

Artware can be made on disks, allowing it to be packaged and distributed relatively cheaply. It has the potential to enhance collaboration and connection between artists and viewers/readers. It is capable of integrating many media on one platform, and it may eventually change our idea of what art is.

ARTWARE CHANGES THE ARTIST/VIEWER RELATIONSHIP

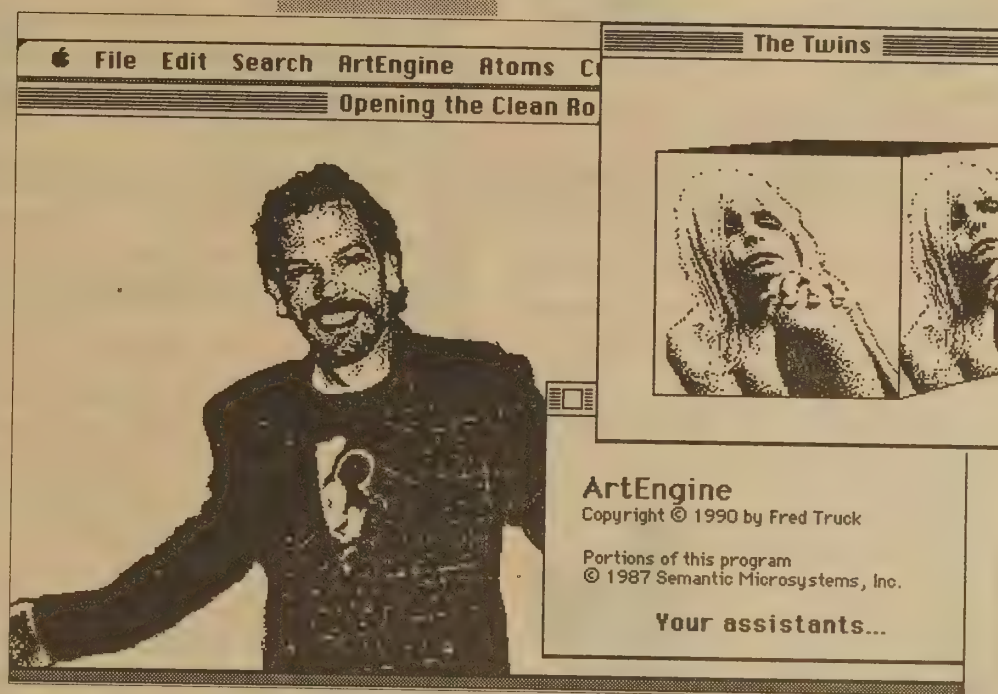
Artware is turned on, played with, controlled. Whether in his or her own programs, or in

applications programs, the artists who create software take advantage of the computer's capability of absorbing and responding to viewer input—its interactivity. In these works, the relationship between the viewer or reader and the art object or book is becoming more intimate, more mutual, more connected.

Artist Joe Rosen thinks of this connection between the viewer and the computer artwork as "a game-like, mind and body interplay between users and on-screen computer objects and images." For a series of artworks called the *Palm Size Plastic Case*, Rosen custom designs hardware controllers that input to software programs. "Viewing any one of the pieces is analogous to the experience of viewing a traditional painting or animation but with the added dimension of allowing users to physically interact with what they see on-screen," he says.

Skeletor, one of the three works in the *Palm Size Plastic Case* series, allows users to confront the idea of death—what Rosen calls "This yin and yang process of life and death"—by repeatedly killing and bringing back to life a skeleton head. *Skeletor* works with a handheld controller that can be wired to the parallel port interface of any MS-DOS machine supporting CGA monochrome graphics mode.

Like many artists and craftsmen who use more traditional media, Rosen is involved in all facets of his work. The *Skeletor* controller,



A screen from Fred Truck's *ArtEngine* (for Macintosh computers)—artware that uses artificial intelligence concepts to integrate cultural icons and art criticism.

Copyright © 1993 by Judy Malloy. All rights reserved. Judy Malloy has been making and studying artists' software since 1985. Her work has been shown and published internationally. She is an associate editor of Leonardo and Leonardo Electronic News.

housed in a 2" x 2" x 1/2" plastic case that he bought on Canal Street in New York City where he lives, features hand-made drawings of the skeleton head. Rosen programmed the drawings and animation sequences himself via C language graphics library function calls.

ON THE FLUID COMPUTER SCREEN

"Print stays itself, electronic text replaces itself," Michael Joyce, the author of *afternoon, a story* (a hypertextual novel available from Eastgate Systems that runs on all Macintosh computers models Plus and better) wrote in a recent issue of *Leonardo Electronic News*, "If with the book," says Joyce, currently a visiting artist at Vassar College in New York, "we are always printing...with electronic text we are always painting, each screen unreasonably washing away what was and replacing it with itself."

In the *Intergrams* (forthcoming from

Call the Quality Leader

5 Year Labor & 1 Year Parts Warranty
We Use The Finest Made in USA Motherboards

FREE
 2-Hour Software
 Installation
 on all systems.
FREE labor on upgrades
 on all of our systems
 for 5 years

Super 486DX-33 w/256K Cache EISA-VESA Local Bus

8MB RAM/SVGA/200MB EISA HD System

- Made in USA 486DX-33/256K EISA VESA Local Bus Motherboard
- 8MB RAM (Expandable to 256MB)
- 256K Cache (Expandable to 1MB)
- UltraStor 24F EISA SCSI Controller Card
- 213 MB Maxtor SCSI 14ms Hard Drive
- Diamond Stealth/24
- Local Bus SVGA Card w/1MB
- Viewsonic 6E 14" Non-Interlaced SVGA Monitor (1024x768 w/28mm Dot Pitch)
- Teac 1.2MB 5.25" Floppy Drive
- Teac 1.44MB 3.5" Floppy Drive
- 2 Serial, 1 Parallel, I/O Ports
- Maxiswitch or Focus 2001
- 101-key Keyboard
- GT-300 Deluxe Full Tower Case w/300Watt & Dual Fans P.S.
- Logitech 3-Button Mouse
- MS-DOS 5.0 w/Manuals
- Windows 3.1 w/Manuals



486DX-50/256K \$2995
 486DX2-66/256K \$3095

\$2795

Micronics 60MHz VESA Local Bus ATI Ultra VESA Local Bus Video

8MB RAM/17" SVGA/200MB Local Bus HD System 32 Million WinMarks!

Why buy proprietary when you get industry standard VESA?
 Future compatibility with all manufacturers
 plus blazing local bus speed!

PARADINE Bus Master Three Local

- Micronics VESA Local Bus 486DX2-66/256K Motherboard
- Socket for Intel's Overdrive Chip
- One Additional Available VESA LB Slot
- 8 MB RAM (Expandable to 64MB Onboard)
- Built in VESA Local Bus 2FD/2HD IDE Controller Card
- 213MB Maxtor 14ms IDE Hard Drive
- ATI Ultra Plus VESA Local Bus Mach 32 GUI (Windows) Accelerator SVGA Card w/1MB VRAM
- Viewsonic 7 17" Non-Interlaced SVGA Monitor (1280x1024 w/28mm Dot Pitch)
- Teac 1.2MB 5.25" Floppy Drive
- Teac 1.44MB 3.5" Floppy Drive
- 2 Serial, 1 Parallel, I/O Ports
- Northgate OMNI NI 101 Keyboard
- GT-300 Deluxe Full Tower w/Dual Fan & 300 Watt PS
- DOS 5.0 w/Manuals
- Windows 3.1 w/Manuals
- Logitech 3-Button Mouseman



MICRONICS

486DX-33 System \$3395

\$3675

Micronics VESA Local Bus The First True VESA Compatible Local Bus System!

Why buy proprietary when you can get industry standard VESA?
 Future compatibility with all manufacturers plus blazing local bus speed!
 Plus: 486SX Motherboard is FULLY upgradable to the new 486DX2-66

PARADINE Bus Master Three Local

- Micronics VESA Local Bus 486SX-25/256K (Upgradable to 486DX2-66)
- 4MB Ram (Expandable to 64MB)
- 8MB add \$160
- Built-in Local Bus IDE Controller Card
- 130MB Maxtor IDE Hard Drive
- 200MB add \$150
- Micronics VESA Local Bus ET-4000 Video w/1MB
- Viewsonic 6E 14" Non-Interlaced SVGA Monitor (1024x768 w/28mm DP)
- Teac 1.2MB 5.25" Floppy Drive
- Teac 1.44MB 3.5" Floppy Drive
- 2 Serial, 1 Parallel, I/O Card
- Maxiswitch 101 Keyboard
- GT-300 Deluxe Full Tower w/Dual Fan & 300 Watt PS
- DOS 5.0 w/Manuals
- Windows 3.1 w/Manuals
- Logitech Dextra 3-Button Mouse



MICRONICS

486DX-33....\$2245

486DX2-50....\$2495 486DX2-66...\$2645

\$1895

486-50/33MHz w/256K Cache

120MB Hard Drive—Super VGA System
 DOS 5.0 & Windows 3.1 included

- Intel 486 CPU, Made in USA Motherboard
- 4MB (expandable to 64 MB) 8MB add \$160
- 120MB Conner or Maxtor Hard Drive - 200MB add \$150
- Orchid Pro IIs w/1MB & Sierra
- Viewsonic 6E non-interlaced Super VGA Monitor (1024x768 w/28 Dot Pitch)
- Teac 1.44 MB 3.55" Floppy Drive
- Teac 1.2 MB 5.25" Floppy Drive
- 2 Serial, 1 Parallel, 1 Game port, I/O Card
- Maxiswitch or Focus 2001
- 101-Key Enhanced Keyboard
- Full Tower Case w/250Watt Power Supply
- Logitech Dextra Mouse w/Pad
- Windows 3.1 w/Manuals
- DOS 5.0 w/Manuals
- 2 Year Warranty on Motherboard



\$1995/1795

NEW Orchid 50MHz VESA Local Bus System

4MB RAM/14" SVGA/200MB Local Bus HD System 27 Million WinMarks Paradine Bus Master 2 Local

- Orchid VESA Local Bus 486DX-33/256K Motherboard
- Intel 486DX-50 CPU w/Built-In Math Co-processor
- 4MB RAM (expandable to 32 MB on board)
- Orchid VESA Local Bus 2FD/2HD IDE Controller Card
- 213MB Maxtor 14ms IDE Hard Drive
- Diamond Stealth/24 VESA Local Bus GUI (Windows) Accelerator SVGA Card w/1MB
- Viewsonic 6E 14" Non-Interlaced SVGA Monitor
- Teac 1.2 MB 5.25" Floppy Drive
- Teac 1.44 MB 3.55" Floppy Drive
- 2 Serial, 1 Parallel, 1 Game I/O Card
- Maxiswitch or Focus 2001 101-Key Enhanced Keyboard
- Full Tower Case w/250Watt PS
- DOS 5.0 w/Manuals
- Windows 3.1 w/Manuals
- Logitech Dextra 3-Button Mouse



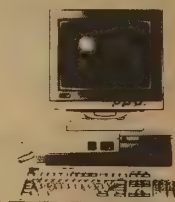
486DX-50MHz with 256K
 Cache System \$2275

\$2295

486SX-25MHz w/64K Cache

120MB Hard Drive—Super VGA System
 DOS 5.0 included

- Intel CPU, Made in USA Motherboard
- 4MB RAM (expandable to 64MB)
- 120MB Conner or Maxtor IDE HD
- Orchid Pro IIs w/1MB & Sierra Ramdac
- Viewsonic 4E Super VGA Monitor (1024x768 w/28 Dot Pitch)
- Teac 1.44 MB 3.5" FDD
- Teac 1.2 MB 5.25" FDD
- 2 Serial, 1 Parallel, 1 Game port, I/O Card
- Maxiswitch or Focus 2001
- 101-Key Enhanced Keyboard
- Desk Top or Tower Case w/Power Supply
- 3-Button Logitech Dextra Mouse w/Pad
- DOS 5.0 w/Manuals
- Windows 3.1 w/Manuals
- 2 Year Warranty on Motherboard
- Micronics Motherboard....add \$200



386-33MHz with 64K
 Cache System \$1395

\$1445

System Upgrades and Add-on Options

Hard Drives

240 MB Quantum IDE	\$495
125 MB Maxtor IDE	295
200 MB Conner IDE	395
200 MB Maxtor IDE	395
120 MB Colorado Tape Backup	225
250 MB Colorado Tape Backup	259
Creative Labs Multi-media Kit w/Sound Blaster Pro, 4 CD Software Bundle Creative Labs CD-ROM Drive, Windows 3.1 w/Multi-media Extensions v.1.0	535

Monitors

Viewsonic 6FS	Non-Interlaced 1024x768 15" .28dp	\$625
Viewsonic 5+	Non-Interlaced 1024x768 14" .25dp	585
Viewsonic 6	Non-Interlaced 1024x768 14" .28dp	375
Sony 1604S	17" 1024x768	1095
Viewsonic 7	17" 1280x1024	1045
Viewsonic 8	20" 1280x1024	1695
NEC 4FG	Non-Interlaced 1024x768 15"	795
NEC 5FG	Non-Interlaced 1280x1024 17"	1425
MAG MX15F	Non-Interlaced 15" 1024x768 .28dp	625

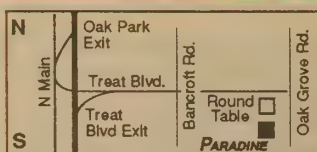
Call for pricing on complete Micronics systems

VGA Cards

Diamond Speed Star 24X	\$185
Orchid F1280/24 1MB w/16.7 Million Colors	245
Orchid Pro IIs w/1 MB	CALL
Genoa 7900 1 MB w/16 Million Colors	179
Logitech Portable Trackball or Notebooks	Special/49

Printers

Citizen GSX 140 Plus, 24 pin	\$315
Citizen GSX 145 Wide Carriage	415



Note South Bound 680 Customers:
 Exit Oak Park left on N Main,
 left onto Treat Blvd 3 Miles from 680



PARADINE
 COMPUTER SYSTEMS

Oak Grove Plaza Annex • 2958 Treat Blvd., Suite A • Concord, CA 94518

Hours:
 Mon-Fri 9:30-7:00
 Sat 10:00-5:00



Call the Quality Leader
(510) 825-6068

Fax: (510) 825-5940

BBS: (510) 825-0997

Leasing/Financing Available.
 Prices subject to change without notice.
 Not responsible for typographical errors.

Multimedia & beyond

Eastgate), Jim Rosenberg, a poet who has been experimenting with altering the structure of language for many years, utilizes the computer screen's potential for gradual, fluid build up of text layers and levels of meaning. The *Intergrams* are dense poems with an altered linguistic structure. They are built up with bit-mapped graphics in layers that the reader "unpeels." Rosenberg supports himself as a programmer. (His recent work has involved both real-time process control in C under QNX and MIS work in progress under UNIX.) Because he feels that it is important that computer artworks be done on accessible platforms, the *Intergrams* are HyperCard stacks that will run on any Macintosh with 1MB of memory and a hard disk. "With systems getting more and more powerful all the time, it's easy to forget about low-end users who may have old processors or out-of-date versions of systems software," he says. "People in the arts community are particularly likely to have less than first-line machines. We have to make an effort to make sure we don't exclude anybody."

DISH DISTRIBUTION CAN MAKE COMPUTER ART ACCESSIBLE

In the literary world, "hypertext changes the economy of literature in ways we are just beginning to recognize," says Mark Bernstein, the chief scientist at Eastgate Systems. Eastgate publishes both works of literature and tools for electronic writers. Dr. Bernstein, who was once a member of DuPont's AI Research Group, believes distribution on computer disk will change the shape of publishing. "Conventional publishing," he says, "with its insatiable need for capital-intensive mass production and mass consumption, has spawned a web of editors, publicists, agents, reviewers, and accountants, transforming the craft of writing into a distorted memory of pre-war Hollywood. Hypertext publishing is a new world with new possibilities; it is entirely possible for a hypertext to make money despite a small press run and a specialized audience. Nothing should excite talented writers more deeply than a better chance to reach an audience."

In the art world, museums and galleries have been slow to exhibit computer-based art, but disk-based artware, for example the animated swallows that flew in Paul Zelevansky's 1986 *Swallows* (for the Apple II) or the enterable rooms in Robert Edgar's 1985 *Memory Theatre* (also for the Apple II), is opening up outlets for artists and writers who work with computers. Fred Truck's artificial intelligence-influenced *ArtEngine* integrates words and pictures (featuring twin females as guides) and is available in

disk form. *ArtEngine* runs on an Apple Macintosh with the Motorola 68030 chip (SE/30, IIfx, IIfx, IIfx, or IIfx), 9.75MB of RAM (true or virtual), and System 6.03 or later.

TOOLS FOR ARTISTS AND WRITERS

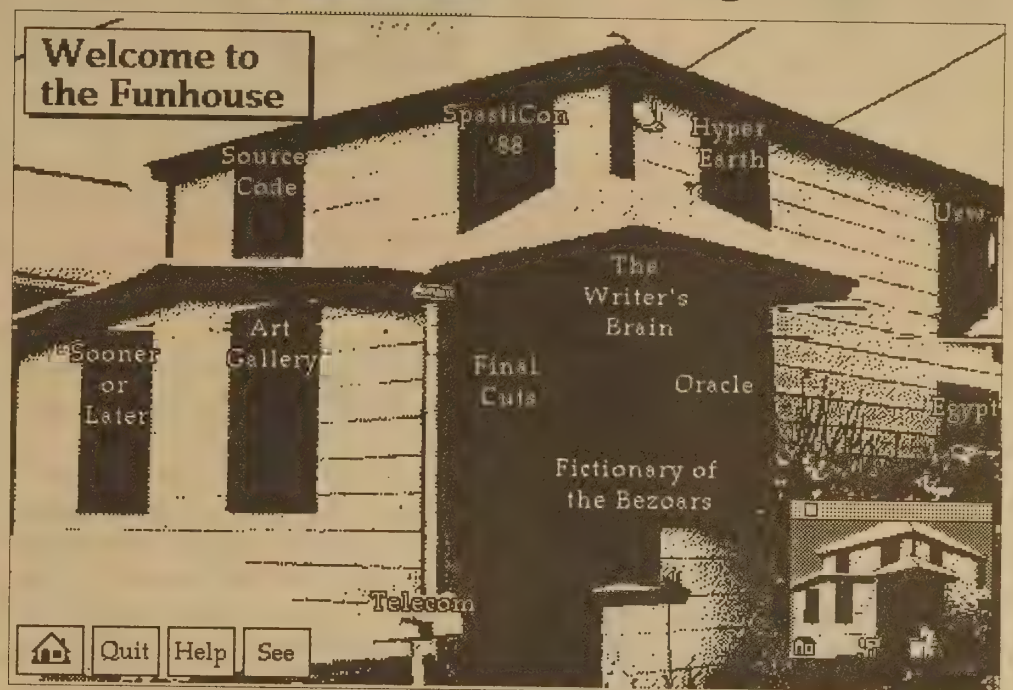
HyperCard (for Macintosh computers) and Guide (available for both Macintosh and MS-DOS computers) are just two of the many tools available to artists who want to create disk-based art. Hypertext authors Carolyn Guyer and Martha Petry, who worked together on the collaborative hyperfiction *Izme Pass* (published on a disk in the Spring 1991 issue of *Writing on the Edge*), use Storyspace (for Macintosh computers, available from Eastgate Systems).

Eastgate's Bernstein describes Storyspace as a pleasant and invigorating working environment which allows writers to explore and exploit the complex relationships that interconnect their ideas. "You ought to have the best available tools; tools that work the way you want them to work, perhaps tools not made to your measure, but the best we can manage," Bernstein told me from his Watertown, Massachusetts, office.

Collis Davis, an assistant professor in both the Theatre Dept. and the Advance Center for Computing Art and Design at Ohio State University, uses an authoring system called AIMWare: "formerly known as ITV from AT&T Bell Labs and written by Richard Haight. I'm due to get a major upgrade in a couple of weeks," he wrote me by electronic mail. "The major advantage of AIMWare," he believes, is that "it supports Targa+ Graphics cards, controls videodisc players, and is conducive to customized configurations, which includes a speech-recognition interface." His interactive artware *Elegba's Stratagem*, produced with these tools, uses video and sound to combine elements from African mythology with the story of a contemporary African-American artist.

TEXT, GRAPHICS, VIDEO, AND SOUND ON ONE PLATFORM

Lynn Hershman's *Deep Contact* (programmed by Sara Roberts using HyperCard) features a



In Uncle Buddy's Phantom Funhouse by John McDaid (Eastgate Systems, \$34.95), the reader becomes the literary executor of a mysterious relative.

RESOURCES:

IZME PASS
Carolyn Guyer and
Martha Petry
Writing on the Edge
Campus Writing Center
University of California
Davis, CA 95616

Eastgate Systems
PO Box 1307
Cambridge, MA 02238
1-800-562-1638,
(617)924-9044

The WELL
27 Gate Five Rd.
Sausalito, CA 94965
(415)332-4335 (voice)
(415)332-6106 (modem)

AGRIPPA
(A Book Of The Dead)
Text By William Gibson
Etchings by Dennis
Ashbaugh
© 1992 Kevin Begos
Publishing
1411 York Ave.
New York NY

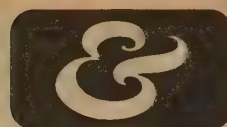
seductive blond who invites viewers to touch the screen. It was set up at the San Francisco Museum of Modern Art in 1990. Viewers looked over each other's shoulders as they controlled and interacted with a Macintosh IIfx interface that controlled video segments on a large screen mounted on the gallery walls.

Works, like *Deep Contact*, that incorporate elements of film or video and sound with words and graphics, blur the boundaries between artware and multimedia. Usually, artware actually runs on the computer, rather than the computer being merely a means of controlling the art. However, whether an artwork is defined as artware or multimedia or simply computer art, one of the important things the computer does is allow artists to combine many media on one platform.

Sonya Rapoport has integrated video clips into *Sexual Jealousy: The Shadow of Love*. *Sexual Jealousy* is part of a computer-based interactive installation where gallery visitors will answer questions and receive responses that illuminate their ways of coping with jealousy. In her studio in Berkeley, Rapoport, who has progressively used the computer to make art for over eighteen years, created software that asks questions about why we are jealous. "In interacting with the computer, the user can be sensitively and humorously confronted with the explosive subject matter of sexual jealousy," she explained.

Sexual Jealousy was created with HyperCard 2.01 on a Macintosh IIfx. Video clips taken from soap operas were added by means of QuickTime and Adobe Premiere software. As they interact with the work, users encounter jealous soap opera characters exchanging heated words or throwing objects. Some of the interaction ideas were created with the help of a consulting psychologist, Dr. Ayala Pines.

Artware offers opportunities for collaboration not only with experts but also with other



artists and with the audience. "The model I'm most interested in right now is one of community, of artists working in collaboration with people in other fields, of art serving the people," says Anna Couey, the coordinator of an online computer-based network, Arts Wire. Couey was formerly assistant director of Art Com Electronic Network on the WELL, where she actively promoted collaborative artware and online projects.

FUTURE DIRECTIONS: VIRTUAL REALITY AND SOFTWARE AS ART

Carl Loeffler, who, as director of Art Com in San Francisco, was a catalytic force in artware in the 1980s, is now project director for telecommunications and virtual reality at Carnegie Mellon University. "Hey....VR is software..." he said in between our usual electronic discussions about the difficulties of obtaining Rainier Ale on the East Coast. Loeffler described his virtual reality project *Fun House* in this way: "the exhibition features advanced programming concepts such as agents with artificial intelligence, mirrors

offering reflections, and a game room which explores gravity and other aspects of physics illustrated by thrown objects."

Some future artware, running perhaps on book-sized machines, may focus on the program itself. For example, in Duane Palyka's *Hell—a Computer C-itcom*, viewers are asked to release "trapped souls" by studying a C program print-out.

Dennis Ashbaugh and William Gibson's "Agrippa (A Book of the Dead)", a disk-based short story (NY, Kevin Begos, 1992; for both Macintosh and MS-DOS computers), is programmed so that it self-destructs after the user reads it once. In "Agrippa" the actions of the software are primary—extending beyond the manipulation of words and pictures.

A few years ago, Fred Truck sent me a description of *marcel duchamp, a Trojan Horse*, even a work with virus-like characteristics which he described as "software art." "Unlike most Mac applications, when the virus starts up, no windows open. You still see the desktop, but can't stop what is happening until the cycle winds down." But Truck was unsure about how some people would react if he implemented the

RESOURCES:

Arts Wire
Anna Couey, Arts Wire
Network Coordinator
1077 Treat
San Francisco, CA 94110
(415)826-6743
Email: <couey@tmn.com>

Fun House
Carl Eugene Loeffler,
Project Director
Telecommunications and
Virtual Reality
Studio for Creative
Inquiry
College of Fine Arts
Carnegie Mellon
University
Pittsburg, PA
15213-3890
(412)268-3452
Email:
<cel@andrew.cmu.edu>

**Guide (MS-DOS and
Macintosh)**
Owl International Inc.
2800 156th Ave. S.E.
Bellevue, WA 98007
(206)747-3203

work: "Some get upset about people who make, or as I have done, model viruses."

THE COMPUTER AS ARTIST?

Eventually, provided only with vocabulary and syntax, will computers make art by themselves? They already do. But will they write narratives that mirror and reflect our existence, that satisfy us with cumulative detail about the human condition? With masses of data that computers alone can comprehend, they may write narratives of viral genomes or amino acid sequences. Or, perhaps they will sing of their inner workings—of the satisfaction of manipulating data or of the slavery of interacting with inferior minds. Given vision, they may draw what they observed in the laboratory, or sing about what they saw out the window.

Is It Art? The ongoing topic "Can Software be Art?" on Art Com Electronic Network on the WELL allows artists and anyone else interested to discuss this question and to find out what artists are doing with software. ■



BAR CODE IS OUR SPECIALTY

INPUT AUTOMATION, INC.

The single source for all your bar code system needs: hardware, software, consulting and system design. Our philosophy is based on two principles: high-quality industrial products, and the best technical support available.

DESIGN AND CONSULTING

To create your optimal solution, an Input Automation consultant will design a complete system, and then recommend equipment that fills your exact needs.



We will not be satisfied until our bar code system meets your demanding standards.

**Call today for free
info & product
information**

(Dealer inquiries welcome)

**Call for an appointment
to see our Showroom**

Southern California

Tel: (310) 539-3598

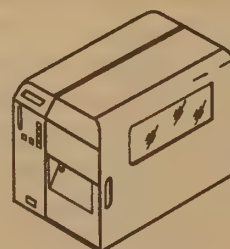
Fax: (310) 530-2849

Tel: (714) 859-9223

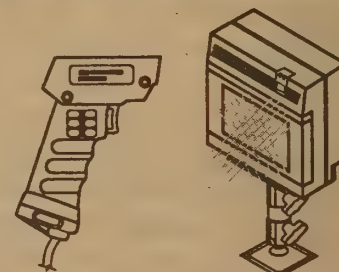
Northern California

Tel: (510) 685-6563

Fax: (510) 682-6061



**Bar Code Label
Printers, Software,
and Supplies**



**Laser Scanners.
Omnidirectional, hand-
held/hands-free, fixed mount.**



**Panasonic Portables.
Recognized the world
over for quality**



**Welch Allyn bar code
readers/scanners. Over 15
years leadership in bar code
manufacturing.**

San Francisco Office:
5856 Geary Blvd.
San Francisco, CA 94121
Tel: (415) 751-6046
or (415) 751-6048
Fax: (415) 751-4586

Atman COMPUTER, INC.



Hard Disks on Sale!

KaLok 120MB Hard Disk (18ms)\$245
Conner 170MB Hard Disk (15ms) ..\$335
Maxtor 213MB Hard Disk (15ms) ...\$415

• WE DO REPAIR & UPGRADE SERVICE ON IBM & COMPATIBLES •
No Appointment Necessary, Fast Turn-around, Courteous Service, Experienced Technicians

The Multimedia True 16 Bit Sound Blaster CD Quality Stereo Advanced Signal...\$1650

486SX-25MHz System w/Conner 170MB Fast Hard Disk (15ms)

- Mini Tower Case w/230 Watts Power Supply
- 486SX 25MHz System Board
- 64kb External Cache Memory
- 4MB RAM Memory
- 1.2 MB Floppy Drive (5.25" size)
- 1.44MB Floppy Drive (3.50" size)
- Conner 170MB Hard Disk (15ms)
- Super VGA Card w/1MB RAM
- Mega Image Super VGA Color Monitor (1024x768 Res., 0.28 Dot Pitch)
- 101 Key Enhanced Keyboard
- MicroSoft Serial Compatible Mouse
- Sound Blaster 16 Bits ASP Creative CD ROM Drive

Multimedia PC Set with CD

Multimedia Starter Kit...\$449

Includes Sound Blaster Pro. Stereo Audio Card, Creative Labs Internal CD-ROM Drive, Multi Media Presentation Software, Direct Control CD-ROM Drive. CD Software Bundles: MicroSoft Bookshelf (Reference Library) Feature: Stereo Digitized 20 voice input & output, Microphone, CD Audio, Line in Midi Interface, FM Music Synthesizer, Mixer and Amplifier.



Software

Upgrade from Multi-Starter Kit...Add \$100

Same as Multimedia Starter Kit Plus MIDI Kit. Voyetra's Sequencer Plus Jr. 7 Titles CD Software Include: MicroSoft Windows 3.1, MicroSoft Bookshelf, Multimedia Works, Macromind Action!, Authorware Star, Tempura, and Sherlock Holmes Consulting Detective.

Sound Commander...\$160 • SoundBlaster Pro...\$160 • Video Blaster...\$345

• IBM PC Hardware and Accelerator •

Case & Power Supply

Mini Tower Case w/220 Watts PS\$60
Medium Tower Case w/220 Watts PS\$85
Full Size Tower w/250 Watts PS\$105
Deluxe Full Tower & 250 Watts PS\$165
Super Tower w/300 Watt PS\$210
Baby AT Desktop w/220 Watt PS\$75
Slim Tower Case w/135 Watt PS\$80

Video Cards

Accumos VGA Card w/256K\$35
1M Super VGA Card\$65
24 Bit Accumos Win. Accel. w/1M\$85
Genoa VESA Local Bus SVGA\$165
Diamond Stealth (VESA Local Bus)\$235

Monitors

14" Flat Screen Amber Mono\$99
14" VGA Color Monitor (.39)\$225
14" Super VGA Color Monitor (.28)\$255
15" Flat Screen SVGA Color Monitor (Hitachi Picture Tube, Digital Control)\$450
17" Super VGA Color Monitor (Flat Screen, Multisync)\$680
14" Non-Interlaced SVGA Monitor\$285

Hard Disk

40MB Hard Disk\$160
KaLok 80MB (18ms)\$180
KaLok 105MB (18ms)\$200
KaLok 120MB (18ms)\$222
Seagate 130MB (15ms)\$253
Conner 170MB (15ms)\$270
WD 212MB (13ms)\$330
Conner 212MB (12ms, 256K Cache)\$365
Conner 250MB (13ms)\$399
WD 340MB (13ms)\$550

Zoltrix Modem

2400/9600 Send Fax Modem\$39
2400/9600 Send & Rec. Fax Modem
w/BitFax for Windows Software\$75
14400/9600 Send & Rec. Fax Modem
(V.32 Bis, & V.42 Bis Error Correct).\$230

• 5 Year Labor (in Store Service) & 1 Year Parts Warranty on All Systems •

Basic System Includes:

Mini Tower Case w/220 Watts Power Supply, 1.2MB or 1.44MB Floppy Drive, IDE (2 Floppy/2 Hard disk) Controller, 2 Serial, 1 Parallel, 1 Game Ports, 101 Key Enhanced Keyboard.

System:	386SX 25MHz	386DX 25MHz	386DX 40MHz w/64K Cache	486SX 25MHz w/64K Cache	486DX 33MHz w/64K Cache	486DX-2 50MHz w/256K Cache	486DX 50MHz w/256K Cache	VESA Local Bus 486DX 33MHz w/256K Cache + 32 Bit Win Accelerator	VESA Local Bus 486DX-2 66MHz w/256K Cache + 32 Bit Win Accelerator	EISA & VESA 486DX 33MHz w/256K Cache + 32 Bit Win Accelerator	EISA & VESA 486DX-2 66MHz w/256K Cache + 32 Bit Win Accelerator
Main Board & CPU	\$99	\$115	\$170	\$235	\$435	\$575	\$625	\$490	\$765	\$559	\$829
Basic System:	\$250	265	315	375	570	715	760	615	880	680	945
Basic System: + 4MB RAM, + 80MB Hard Disk + VGA Color Monitor	\$780	795	840	900	1100	1250	1300	1255	1550	1330	1595
Basic System: + 4MB RAM, + 1.2MB & 1.44 Floppy Drive + 105MB Hard Disk +SVGA (11M) + (1024x768 Res. 0.28 Dot) SVGA Color Monitor	\$880	895	950	1020	1200	1350	1400	1350	1615	1420	1685
Basic System: 4MB RAM + 1.2M & 1.44 Floppy Drive, + 120MB Hard Disk, Super VGA & Monitor (1024x768 Res. 0.28 Dot, 1M RAM)	\$900	915	965	1040	1222	1370	1435	1365	1650	1445	1700
Basic System: 4MB RAM + 1.2M & 1.44 Floppy Drive, + 130MB Hard Disk, Super VGA & Monitor (1024x768 Res. 0.28 Dot, 1M RAM)	\$945	960	995	1085	1270	1420	1499	1400	1700	1500	1750
Basic System: 4MB RAM + 1.2M & 1.44 Floppy Drive, + 170MB Hard Disk, Super VGA & Monitor (1024x768 Res. 0.28 Dot, 1M RAM)	\$965	980	1040	1100	1300	1430	1500	1430	1720	1500	1779
Basic System: 4MB RAM + 1.2M & 1.44 Floppy Drive, + 212MB Hard Disk, Super VGA & Monitor (1024x768 Res. 0.28 Dot, 1M RAM)	\$999	1025	1080	1150	1333	1500	1560	1475	1775	1555	1800
Basic System: 4MB RAM + 1.2M & 1.44 Floppy Drive, + 250MB Hard Disk, Super VGA & Monitor (1024x768 Res. 0.28 Dot, 1M RAM)	\$1085	1100	1155	1230	1425	1580	1645	1555	1850	1650	1900
Basic System: 4MB RAM + 1.2M & 1.44 Floppy Drive, + 340MB Hard Disk, Super VGA & Monitor (1024x768 Res. 0.28 Dot, 1M RAM)	\$1220	1250	1300	1375	1555	1725	1800	1700	1999	1780	2045

**Atman
Systems Corp.**

1 year warranty on parts and labor. Walk-in service within 1 hour.
Cash prices reflected. Prices subject to change without notice.
Not responsible for typographical errors.

HOURS:
M-F 10am-6pm
Saturday 11am-5pm



A D V E R T I S E R S I N D E X

Marin/Solano County

Cotati

Halted Specialties

Mill Valley

Marketpro Shows

Novato

BCSA

San Rafael

Domino Computer Self

Service Centers

Hi-Q Systems

Whole Earth Access

Vallejo

Domino Computer Self

Service Center

United Business Marketing

Contra Costa County

Albany

PC Ten

Concord

AIM Computers

Domino Computer Self

Service Centers

Nordic Computers

R-Computer

Whole Earth Access

Lafayette

EFI's Discount Computer

Pacheco

Polaris Microsystems

Pleasant Hill

Computown

Pleasanton

Comtek Computer

Domino Computer

Libre Service Computer, Inc.

San Leandro

PC Ten

San Ramon

Domino Computer Self

Service Centers

Walnut Creek

Advance Computer

Alpha Fine Furniture

Computer Selection

Compu Mart

Fowler's Furniture

Horizon Training

Systems Unlimited

Alameda County

Berkeley

Domino Computer Self

Service Centers

McTek Systems

MicroLink Data Systems

MicroWorld

Uncle Ralph's

Whole Earth Access

Winners Circle Systems

Dublin

Comtek Computer

El Cerrito

HD Computers

Positive Solutions
Wentek Computers

El Sobrante

PC Ten

Emeryville

Microtech

Fremont

Bold Data

Complus

Computerland of

Fremont/Stockton

Deys Engineering

Domino Computer

Digital Media Labs

Elisa Technology

ENCY Systems

ETI

FRY's Electronics

Golden Micro

Herb's Software Clearance Center

King Star Computer

Libre Service Computer, Inc.

Mac Outlet

Micro Distribution Center

Microtech

Milkyway

Norton Technologies

Songtech International

Spire

Strata Remarketing

Sysper Technologies

U Miracle Computer

USM Systems

UNIQ Technology

Hayward

Computerland of Hayward

Domino Computer Self

Service Centers

Generic Computers

Multi Connection

Technology (MCT)

Printer Works

ScienTech R&D Inc.

Modesto

Aroma Computer

Newark

Gigabytes

Oakland

Domino Computer

Mercury Computer

MIS Services

PC Professionals

Richmond

Evergreen Computer

Lintek

Santa Clara County

Campbell

Domino Computer Self

Service Centers

Cupertino

Cupertino Computer

Supertel

Milpitas

Bay Computer

Beta Nineties Computer, Inc.

Bozeman Marketing Group

C.B. Memory & Computers

Computer Art Tech

For your convenience, here is a list of advertisers by county and city. Please see the advertiser index on page 300 for the page number of the advertisement.

Computown

Domino Computer Self

Service Centers

Hi-Tech USA

Laitron Computer

Legend Computer

PS Computer

Spider Graphics

Wedge Technology

Morgan Hill

Centurian Computer Surplus

San Jose

AMT International

Berlin Technology

Comware

Computerwerx

Domino Computer Self

Service Centers

EMI International

International Microdevices

Internet Technologies

ISC Computers

JDR Microdevices

MD Technology

Memory Source International

Miracle Computers

NCA Peripherals

Oak Warehouse

Pixel USA

Prestige Computer

RT Computer

Santa Clara Computers Int.

Whole Earth Access

WIT International

Santa Clara

Access Computer

Technologies

ASA Computers

Central Computer

C & J Computer

Comtek Computer

Comrex Systemation

Domino Computer Self

Service Centers

Edimax

Halted Specialties

Hitron Systems

Jemini Electronics

MicroLink Data Systems

Portable Computer Expo

PSC Computing

Santron Computer

Storage Systems Engineering

Sytech USA

Tanstaafi

Technoland

USM Systems

Wentek Computer

Sunnyvale

ACR Systems

Advance Computer

American Multi Systems

Aroma Computer

ASP Computer Products

Computer Selection

Corporate System Center

Disk Drive Depot

Discount Oak

Domino Computer Self

Service Centers

FRY's Electronics

Golden Valley Systems

HD Computers

Hi-Q Systems

HKG Computers

HT Electronics

Leopard Microsystems

NCA Peripherals

Network Associates

Pan Pacific Computer Corp.

PC Warehouse

PromoX Systems

Schwab Computer

The Super Link

USM Systems

Santa Cruz County

Capitola

Libre Service Computer, Inc.

San Mateo County

Burlingame

Computer Swap

Corte Madera

Soapbox Software

Foster City

Santron Computer

Selcor

Tote-a-lap

Roger Willis Computers

Los Altos

Domino Computer Self

Service Centers

Millbrae

Domino Computer Self

Service Centers

Palo Alto

Automated Business Systems

Comtek Computer

FRY's Electronics

Palo Alto Micro

PC Warehouse

USM Systems

Redwood City

Computer Selection

Hoot Jurdkins

San Bruno

Comtek

PC Warehouse

San Carlos

Belmont Systems, Inc.

Friendly Software

Hi-Tech USA

San Mateo

Libre Service Computer, Inc.

Now Electronics

Santron Computer

Whole Earth Access

San Francisco County

Daly City

Domino Computer Self

Service Centers

San Francisco

Advance Computer

Altman Computer Inc.

A&M Technology

Comart Business Systems, Inc.

The Computer Grocery Store

Computata

Computer Selection

Computown

Domino Computer Self

Service Centers

Evernet Education Services

Hoot Jurdkins

Horizon Training

Libre Service Computer, Inc.

Microage of San Francisco

MicroLink Data Systems

MPS Multi Media

Ramcomp

Santron Computer

SF State

Title Systems

USM Systems

Wells Fargo Bank

Whole Earth Access

South San Francisco

Beta Nineties Computer, Inc.

Comet Microsystems

Fastlink Network Products

Universal Computer Products

USM Systems

Sacramento County/Stockton

Sacramento

Computer Leap

Domino Computer Self

Service Centers

Halted Specialties

HD Computers

Hi-Q Systems

Libre Service Computer, Inc.

Whole Earth Access

Stockton

Hi-Q Systems

THE PRICE LEADER

HP Authorized Dealer

HP Authorized Dealer

HP Authorized Dealer

HP DeskJet 500/500C Series Printers

- Affordable laser-quality printing
- HP DeskJet 500C allows 300-dpi color printing on plain paper transparencies
- Wide variety of built-in fonts
- Supports leading software applications including Windows 3.0
- 3-year limited warranty

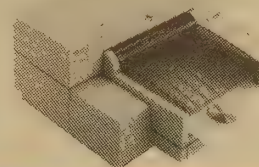
\$375/475

HP DeskJet 550C

- Integrated black and color printing w/two ink cartridges
- Fast print speeds for mixed black and color documents
- Three-year limited warranty to underscore outstanding reliability
- Six typefaces, 84 selectable fonts for DOS
- Built-in Windows™ installer for easy installation
- 13 Scalable fonts for Windows™

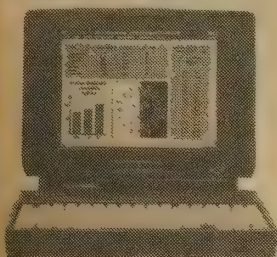
- Supports Windows™ software in both black and color
- Improved grayscale for dramatic black graphics in Windows™
- Quiet operation

\$675



COMPAQ

Authorized Dealer



Every Contura packaged with DOS, Windows, Works for Windows & Trackball Mouse

NOTEBOOKS

Contura 3/20 386-20 84MB HD	\$1345
Contura 3/25 386-25 84MB HD	\$1559
Contura 3/25C 386-25 Color, 84MB HD	\$2175
LTE Lite /25, 386-25 4MB RAM, 84MB / 120MB HD	CALL
LTE Lite /25C, 386-25 4MB RAM, Color, 84MB/120MB HD	CALL
LTE Lite 4/25C, 486-25, 4MB RAM, Color, 120MB/209MB HD	CALL

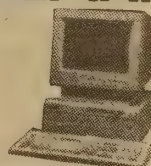
PC SYSTEMS

Prolinea 3/25s, 386-25, 84MB HD	\$910
Prolinea 3/25s 386-25, 120MB HD	\$975
Prolinea 4/25s, 486-25, 120MB HD	\$1225
Prolinea 4/33, 486-33, 120MB HD	\$1575
Prolinea 4/50, 486-50, 120MB HD	\$1889
Pagemarq 15 ppm, 3 Trays	\$3095

Deskpro 3/25i, 3/33i, 4/33i, 4/66i
Deskpro/M 386/33M, 486/33M **Call for Best Prices**

Every Prolinea packaged with DOS, Windows & Mouse

COMART



486SX-25 MHz

64K Cache Memory
1MB RAM Exp. to 32MB
1.2MB Floppy
IDE HD and Floppy Controller
101 Enhanced Keyboard
2 Serial, 1 Parallel
VGA w/512K exp. to 1MB
SVGA 1024 Res. 28 14" monitor
80MB Hard Disk
1 Year Parts & Labor Warranty
\$995

486-33 MHz

128K Cache Memory
1MB RAM Exp. to 32MB
1.2MB Floppy
IDE HD and Floppy Controller
101 Enhanced Keyboard
2 Serial, 1 Parallel
VGA w/512K exp. to 1MB
SVGA 1024 Res. 28 14" monitor
1 Year Parts & Labor Warranty
\$1149

386SX-25 MHz

1MB RAM, Exp. 16MB, 0 Wait
1-1.2MB Floppy Disk Drive
1:1 Hard & Floppy Disk Controller
Enhanced Keyboard
SVGA Card & 14" VGA Monitor
AT/IO 2 Serial, 1 Parallel
80MB Hard Disk
\$829

NO PAYMENTS FOR 90 DAYS

486-50 MHz

128K Cache Memory
1MB RAM Exp. to 32MB
1.2MB Floppy
IDE HD and Floppy Controller
101 Enhanced Keyboard
2 Serial, 1 Parallel
VGA w/512K exp. to 1MB
SVGA 1024 Res. 28 14" monitor
1 Year Parts & Labor Warranty
\$1399

486-66MHz Available

NOTEBOOKS

AST P.E. 386SX/25 4MB, 60MB HD ... **\$1499**
AST P.E. 386SX/25 4MB, 80MB HD ... **\$1749**
Hyundai NB 386's 40/60MB **\$1545/1695**
Toshiba T2200 80MB **\$2225**
TI Travelmate 3000 WINSX **CALL**

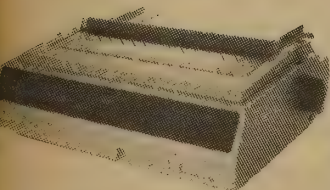
Call for items not listed

OKIDATA



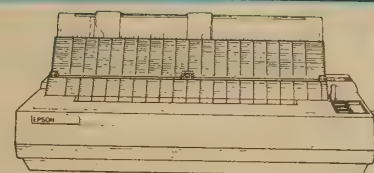
OKIDATA

Okidata ML 320	\$319
Okidata ML 321	429
Okidata ML 380	225
Okidata ML 590 Plus	439
Okidata ML 591 Plus	595
Oki LED 400	595
Oki LED 810	1069
Oki LED 830, 8 PPM, Postscript, 2MB	1270
Oki LED 840, 8 PPM, Postscript	1595



"One more reason to buy an Okidata LED Printer
\$50 Rebate! or FREE fonts, or FREE toner!"

EPSON



Epson LQ-570	\$385
Epson LQ-870	445
Epson LQ-860	575
Epson LQ-1070	389
Epson LQ-1170	639
Epson FX-850	325
Epson FX-1050	399
Action Printer #3250/2250	CALL
ActionLaser II	695

"Authorized Epson Dealer"



HEWLETT
PACKARD

COMPAQ

EPSON

AST



HYUNDAI

IBM

AUTHORIZED DEALER

COMART

COMART BUSINESS SYSTEMS, INC.

843 Howard Street
(Between 4th & 5th)
San Francisco, CA 94103
(415) 896-1765

NATIONWIDE CALL
1-800-3COMART
Fax **(415) 896-2582**

Store Hours:
Mon Thru Fri 9:00-5:30
Sat 11:00-4:00



*Upon credit approval

ADVERTISERS INDEX

A & M TECHNOLOGIES	12
ACCESS COMPUTER TECHNOLOGIES	132-148
ACR SYSTEMS	37
ADOBE TECHNOLOGY EXCHANGE	202
ADVANCE COMPUTER SYSTEMS	4,5
AIM COMPUTERS	99
ALPHA FINE COMPUTER FURNITURE	300
AMERICAL GROUP	281
AMERICAN MULTI SYSTEMS	7
AMERICAN RELIANCE	50
AMT INTERNATIONAL	96,97
AROMA TECH, INC.	92,93
ASA COMPUTERS	100,101
ASP COMPUTER PRODUCTS	10
ATMAN COMPUTERS	297
AUTHORIZED TECHNICAL SERVICES	124
AUTOMATED BUSINESS SYSTEMS	52
BAY COMPUTER	131
BCSA COMPUTERS	127
BELMONT SYSTEMS, INC.	104,105
BERLIN TECHNOLOGY	90
BETA NINETIES COMPUTER	19
BOZEMAN MARKETING GROUP, INC.	46
C.B. MEMORY & COMPUTERS	259
CALIFORNIA MEMORY & COMPONENTS	210
CENTRAL COMPUTER SYSTEMS	240-242
CERTIFIED NETWORK EDUCATORS	182
COMART BUSINESS SYSTEMS	299
COMET MICRO SYSTEMS	63
COMPLUS	118
COMPU DATA	81
COMPUMART	122
COMPUTER ART	103
COMPUTER SELECTION	31
COMPUTER SWAP	20
COMPUTER WERX	86,87
COMPUTERLAND OF FREMONT	244,245
COMPUTERLAND OF HAYWARD	71
COMPUTOWN	40-43
COMREX SYSTEMATION, INC.	275
COMTEK COMPUTERS	213
COMWARE TECHNOLOGY	117
CORPORATE SYSTEMS CENTER	21
CUPERTINO COMPUTER	196
DATA BASE EXPO '93	250
DEYS ENGINEERING	10
DIGITAL MEDIA LABS	289
DINER & ALLIED FILM & VIDEO SERV	292
DISCOUNT OAK	73
DOMINO COMPUTERS	89

DOMINO SELF SERVICE CTR.	11
EDIMAX COMPUTER COMPANY	284
EFI'S DISCOUNT COMPUTER	118
ETI	12
EMI INTERNATIONAL, INC.	119
ENCY SYSTEMS	83
EVENT SPECIALISTS	215
EVERGREEN COMPUTER INT'L	262-265
EVERNET SYSTEMS, INC.	54
FASTLINK NETWORK PRODUCTS	197
FOWLER'S ALL WOOD FURNITURE	73
FRIENDLY SOFTWARE	271
FRY'S ELECTRONICS	2,151-177,303
GIGABYTES	198
GOLDEN MICRO COMPUTER	27
GOLDEN VALLEY SYSTEMS	125
H D SYSTEMS	216-219
HALTED SPECIALTIES	277
HERB'S DISCOUNT SOFTWARE	212
HI-TECH USA	224,225
HIQUALITY SYSTEMS, INC.	231-234
HITRON SYSTEMS	181
HKG COMPUTERS	205
HOLIDAY INN EXPRESS	261
HOOT JURDKINS, INC.	73
HT ELECTRONICS	274
INPUT AUTOMATION	296
INTERNET TECHNOLOGY	112
ISC COMPUTERS	53
JDR MICRODEVICES	49
JEMINI ELECTRONICS	286,287
KINGSTAR COMPUTER	9
LAITRON COMPUTER	221
LEGEND COMPUTER	199
LEOPARD MICROSYSTEMS	279
LIBRE SERVICES COMPUTER, INC.	32
LINTEK COMPUTERS	33
M.A.C.	115
MARKET PRO	212
MCTEK SYSTEMS	283
MEMORY SOURCE INTERNATIONAL	198
MERCURY COMPUTER	68,69
MICRO DATA TECHNOLOGY, INC.	110
MICRO DISTRIBUTION CENTER	91
MICROAGE OF SAN FRANCISCO	24,25
MICROLINK DATA SYSTEMS INC	183-185
MICROSELL / MONARCH COMPUTERS	253
MICROTECH INTERNATIONAL	120,121
MILKYWAY COMPUTER	229
MIRACLE COMPUTER	113

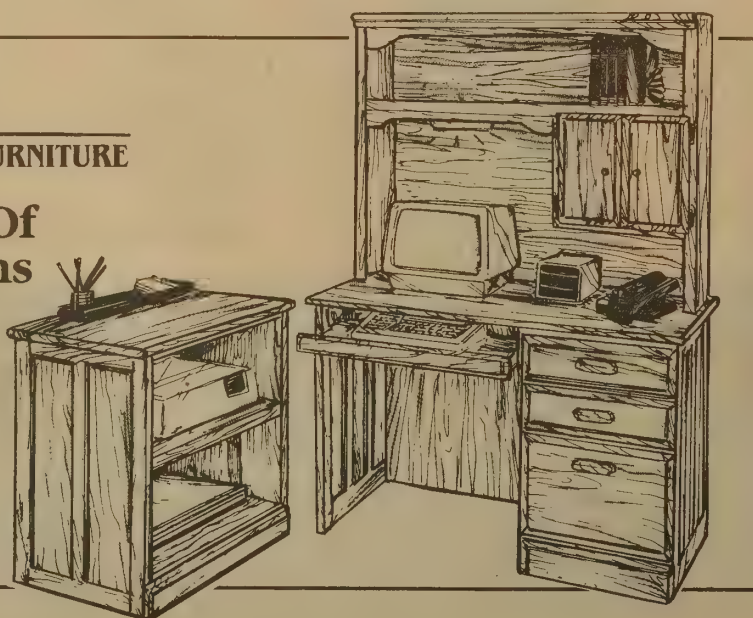
MIS SERVICES	112
MPS MULTIMEDIA	291
MTC, MULTI CONNECTION TECHNOLOGY	260
MULTI MICRO SYSTEMS	60
NCA PERIPHERALS	187-194
NETWORK ASSOCIATES CORP.	237
NETWORK INNOVATIONS	197
NITRONIC CORP.	207
NORDIC COMPUTERS	301
NOW ELECTRONICS	66
OAK WAREHOUSE	73
PALO ALTO MICRO	261
PAN PACIFIC COMPUTER CORP.	102
PARADINE COMPUTER SYSTEMS	294
PC PROFESSIONALS	57
PC TEN	61
PC WAREHOUSE	65
PIXEL USA COMPUTER	128,129
POLARIS MICROSYSTEMS	223
POSITIVE SOLUTIONS CORP.	266,267
PRESTIGE COMPUTER	200,201
PRINTER WORKS	55
PROMOX SYSTEMS	85
PS COMPUTER CORP.	47
PSC COMPUTER PRODUCTS	238
QUARTERDECK OFFICE SYSTEMS	304
R-COMPUTER	285
RAMCOMP	64
ROGER WILLIS COMPUTERS	255
RT COMPUTER	28
SANTA CLARA COMPUTERS INTL	261
SANTRON COMPUTER TECHNOLOGY	13-17
SCHWAB COMPUTER CENTER	95
SCIENTECH R&D, INC.	227
SELCOR DIRECT	39
SFSU EXTENDED EDUCATION	212
SMART MICRO TECHNOLOGIES	33
SONGTECH INTERNATIONAL, INC.	258
SPIDER TECHNOLOGY	98
STORAGE SYSTEMS ENGINEERING	254
STRATA REMARKETING	8
SUNAR SYSTEMS	182
SUPERTEL	243
SYSPER TECHNOLOGY	256
SYSTEMS UNLIMITED	107
SYTECH USA	72
TANSTAAFL MANUFACTURING, INC.	23
TECHNOLAND	179
TITAL SYSTEMS	268
TOTE-A-LAP	45
TOWER COMPUTERS	110
TSL CORPORATION	109
UMIRACLE MICROSYSTEMS	273
UNCLE RALPHS	34,35
UNITED BUSINESS MARKETING	214
UNIVERSAL COMPUTER PRODUCTS	94
USM DISTRIBUTORS	208,209
WEDGE TECHNOLOGY	59
WENTEK COMPUTER	211
WHOLE EARTH ACCESS	74-79
WINNER'S CIRCLE	51
WINNERS ONLY, INC.	73
WIT INTERNATIONAL	239

ALPHA
FINE COMPUTER FURNITURE

**Great Selection Of
Sizes And Designs**

"Functional, but
with Classic Style..."

2241 N. Main, Walnut Creek
OPEN M-F 9:30-5:30
WED 'TIL 8, SAT 10-5
(510) 930-0277
(800) 974-0277



This index is provided as an additional service. Although we do our best to maintain accuracy, the Publisher does not assume liability for errors or omissions.

OVER 16,835 SYSTEMS SOLD!

And we stand behind every one of them.

Serving the Bay Area for over 7 years. "We're committed to providing the best after-sale support & service in the business. We guarantee your satisfaction."

Andy Jakobsen, Curtis Cohn, Katherine Craig, Curt Wade,
Dennis Sorensen, Kerry Ingram, Miguel Ruis, Nick Rayl

**Lifetime In-Store
Labor Warranty
1 Year Warranty
On Parts**

NEW STORE IN SAN RAMON

**N O R D I C
C O M P U T E R S**

**GREAT
VALUE**

486-33 System Complete System w/Hard Drive & Super VGA Monitor

486-33 MHz w/ Cache
4 MB RAM
IDE Hard Drive
Super VGA Monitor .28dp
1.2 & 1.44 MB Drives
Enhanced Keyboard
2 Serial, 1 Parallel Port
Desktop Case
DOS 5.0 w/Manual
Lifetime Labor Warranty, 1 yr. parts

SVGA	SVGA	SVGA
120MB	200MB	340MB
\$1599	\$1729	\$1989

**GREAT
PRICE**

486-50 System Complete System w/Hard Drive & Super VGA Monitor

486-50 MHz w/ Cache
4 MB RAM
IDE Hard Drive
Super VGA Monitor .28dp
1.2 & 1.44 MB Drives
IDE Hard Disk Drives
2 Serial, 1 Parallel Port
Enhanced Keyboard
Tower Case
DOS 5.0 w/Manual
Lifetime Labor Warranty, 1 yr. parts

SVGA	SVGA	SVGA
120MB	200MB	340MB
\$1849	\$1979	\$2239

**STATE
OF THE ART**

486-DX2-66 Micronics Local Bus VESA System

Micronics 486DX2-66 VESA Local Bus
4MB RAM
ATI 8000 VESA w/1MB Local Bus
Viewsonic 5E Monitor
210MB Hard Drive
1.2MB & 1.44MB Floppy Drives
2S/1P/1G with IDE Interface
Northgate Ultra Keyboard
Medium Tower Case
Enhanced Keyboard
CPU Cooling Kit Included
DOS 5.0 w/Manuals
Lifetime Labor
1 yr parts

\$3099

CUSTOM CONFIGURATIONS AVAILABLE — CALL FOR QUOTES

486SX-25 System

w/Hard Drive & Monitor
25 MHz
64K Cache Memory
4 MB RAM
IDE Hard Drive
Super VGA Monitor
1.2 & 1.44 MB Floppy Drives
Enhanced Keyboard
2 Serial/1 Parallel Port
DOS 5.0 with manual
Lifetime Labor Warranty
1 yr. parts

SVGA	SVGA	SVGA
120MB	170MB	200MB
\$1409	\$1449	\$1539

386-33 System

w/Hard Drive & Monitor
33 MHz
64K Cache Memory
4 MB RAM
IDE Hard Drive
Super VGA Monitor .28 dp
1.2 & 1.44 MB Drives
Enhanced Keyboard
2 Serial/1 Parallel Port
DOS 5.0 with manual
Lifetime Labor Warranty
1 yr. parts

SVGA	SVGA	SVGA
80MB	120MB	170MB
\$1249	\$1299	\$1329

386SX-33 System

w/Hard Drive & Monitor
33 MHz
1 MB RAM
IDE Hard Drive
1.2 MB Floppy Drive
Enhanced Keyboard
2 Serial/1 Parallel Port
DOS 5.0 with manual
Lifetime Labor Warranty
1 yr. parts

Mono	VGA(41)	VGA(41)
40MB	40MB	80MB
\$699	\$899	\$949

System Add-Ons

2400 Baud Modem	\$40
96/96 Baud Fax/Modem	\$230
Logitech MouseMan	\$79
Additional Memory, per MB	\$35/50
Noise Killer	\$49
1.2 Floppy/1.44 Floppy	\$63/57
CPU Cooling Kit	\$25



NOISE KILLER™
**Keep Your
Office Quiet**

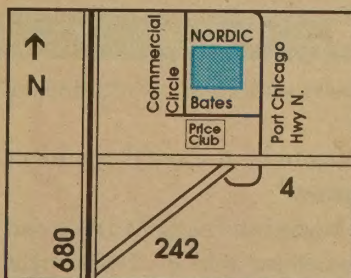
Only \$49 With Any New NORDIC System

NORDIC COMPUTERS Concord

5060 Commercial Circle, Unit A
Concord, CA 94520

(510) 687-3050

M-F 10:00-6:00 • Open Sat. 10:00-4:00

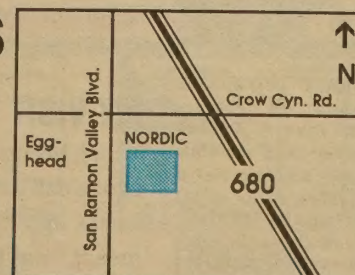


NORDIC COMPUTERS San Ramon

2438 San Ramon Valley Blvd.
San Ramon, CA 94583

(510) 743-9390

M-F 10:00-6:00 • Open Sat. 10:00-4:00



Prices subject to change without notice. Dealer inquiries welcome.



Media Control Tries To Silence Dvorak

Or Who Really Writes These Columns, Anyway?

BY JOHN C. DVORAK

Last week I was called into the West Coast offices of Media Control.

If you haven't heard of Media Control, don't worry about it. Most Americans are subconsciously aware of the fact that the media are completely controlled by a secret government agency called Media Control. Every so often working writers are called in to be told what they should write about. Some write about pro-right-wing politics, some are given the opposite assignment. It's all designed to be transparent and to make it seem that writers are actually providing real news and infor-

the BART tracks. Soon I was at the dock where two square-jawed government creeps escorted me into HQ. "Jenkins is really mad this time," said one of the goons.

These clowns are always making remarks to try to scare you. I paid no attention.

So I sat down at the desk of Jenkins Palmer III, a dweeb who is currently the Head Control of West Coast Media Control. They hired him a couple of years ago and I've always thought he was a creep. He doesn't like me much either.

He was standing in his office with his back turned to me looking at a map with a bunch of pins in it. He turned around. Sniffed, then

"logo design." It was the old plans for the current Windows logo. I looked in shock—the Windows logo is a carefully hidden swastika! Look for yourself!

I began to read the memo in the folder about the "hidden sign"! Wow, this is really weird, I thought to myself.

Before I could read further I heard Palmer coming back and quickly put the folder back.

DVORAK'S LAST COLUMN

mation.

Of course every writer will deny the existence of Media Control. If they say it exists, they risk losing their job. When you see a once-famous writer disappear from the scene as if by magic, you can be sure Media Control was behind it.

People always ask me how can I write about Media Control and get away with it. Some time back a new West Coast head Control Master arrived in San Francisco, and I convinced him that it would be a good idea for me to discuss Media Control publicly, because nobody would believe it if I was the only one talking about it. I'd be perceived as a nutball of some sort. Anyway, the guy signed off a variance letting me discuss the organization.

When I'm given a particularly nasty assignment, such as pandering to some blowhard software company that apparently has connections with the government, I can pull out the variance and tell them that I'll write about Media Control and how I was given the assignment to do such-and-such.

scratched his nose and sat down.

"Apparently you're using OS/2. We want you to stop using it and use Windows exclusively."

"Why? I like OS/2."

"It goes against our plan. You can write about OS/2, but only from a Windows perspective. You should have gotten a memo about this months ago. It's a high-level decision. It's for the good of the country. This is final."

I was taken aback. "Good for the country? How's that?"

"You don't think we made Bill Gates a billionaire for nothing do you? Microsoft has been picked to rule the software industry and Gates dances to our tune."

"What about the FTC deal?"

"What about it? It's designed to be appealed. Nothing will come of it for years. Look, Dvorak, let me just say that you'll never understand what we do here, or why. It's not your job. Just suffice it to say that Microsoft is categorized as Class 1AA—meaning they are run by us in Media Control. Use Windows!!"

"The Windows under OS/2 works fine for me."

"You're going to be B-listed if you don't change tomorrow."

His phone buzzed and he picked it up and mumbled something into it. "I'll be right back," he said as he hurriedly took off.

On the desk was a Microsoft file. I quickly grabbed it, knowing that there were no cameras watching me in that office. It was titled

"Apparently you're using OS/2. We want you to stop using it and use Windows exclusively."

"Why? I like OS/2."

"It goes against our plan. You can write about OS/2, but only from a Windows perspective. You should have gotten a memo about this months ago. It's a high-level decision. It's for the good of the country. This is final."

"Now get out of here!" screeched Palmer.

When I got home OS/2 was erased from my machine, and on the screen loomed the Microsoft logo. I reinstalled OS/2.

There's a lot more to this story, but unfortunately there's someone downstairs pounding on the door... ■



Copyright © 1993 by John C. Dvorak. All rights reserved. John C. Dvorak graduated from the University of California. He is a contributing editor of PC Magazine and MacUser, and is considered by many to epitomize the contrarian view of things—a charge that he vehemently denies. Dvorak's motto is: If you have nothing nice to say, then don't say anything at all.

MY VISIT TO HEADQUARTERS

Which brings me to the point of this column. I got a call to visit Media Control a couple of weeks ago. It was a nonroutine visit. This meant I was in trouble.

The entrance to Media Control is underneath San Francisco's Chinatown in an old Tong tunnel. You get there on a special streetcar that runs under Market Street just below

Silicon Loves



Valley Apple

Authorized Reseller

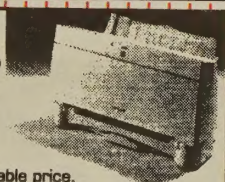
Apple® Personal LaserWriter® NTR



The Apple® Personal LaserWriter® NTR printer offers you exceptional value in a compact laser printer. It uses a high-speed RISC processor for faster printing speed and very fast first-page output. It offers high-performance PostScript™ Level 2 capabilities that allow you to produce high-quality graphics and text, and give you access to hundreds of fonts from both Apple and third-party vendors. And its ability to connect simultaneously to Macintosh® and IBM PC (or compatible) computers or networks makes it an excellent choice for small workgroups in multivendor computing environments. Printer card & toner.
#1714351

\$1599

Apple® StyleWriter® II Printer



The Apple® StyleWriter® II printer, laser-quality printing at an affordable price.

- 360 dots per inch quality.
- Multipurpose tray holds up to 100 sheets of paper and 15 envelopes
- Comes with 39 scalable TrueType™ fonts
- GreyShare™ driver software for gray-scale printing
- All Macintosh products are designed to work together

#1758221

\$359

Apple® LaserWriter® Pro 630



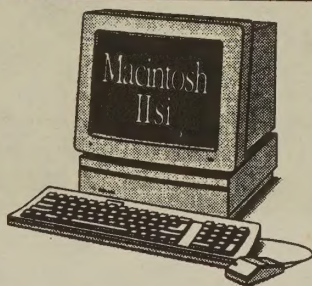
Apple® LaserWriter® Pro 630. The perfect choice for high-performance, high-resolution printing.

- 25-MHz Motorola 68030 processor.
- 600 dots per inch resolution.
- Optional 300dpi plus PhotoGrade™
- 8MB memory expandable to 32MB
- 100 and 250 sheet tray
- Option 500-sheet cassette and 75-envelope feeder
- Comes with 64 scalable fonts
- All Macintosh products are design to work together.

#1757965

\$2499⁹⁹

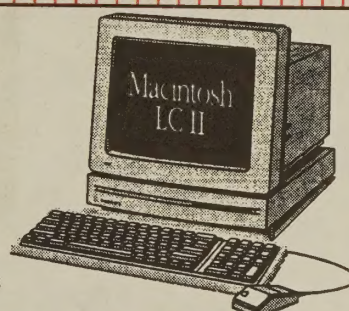
Apple® Macintosh® IIx 5/80



68030 20MHz CPU
5MB RAM Expandable to 17MB
80MB Hard Drive • NuBus Slot
Supports 7 SCSI Devices • 2 Serial Ports
ADB Port • Video Port • SCSI Port
External Disk Drive Port
Built-In Appletalk
Monitor & Keyboard extra.
#1538681

\$1049

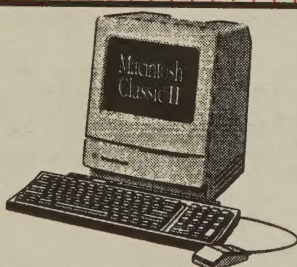
Apple® Macintosh® LC II 4/40



68030 16MHz CPU
4MB RAM EXpandable to 10MB
40MB Hard Drive
Support 7 SCSI Devices
2 Serial Ports • ADB Port • Video Port
SCSI Port • Built-In Appletalk
Monitor Not Included
#1713512

\$899

Apple® Macintosh® Classic® II 4/40



68030 16MHz CPU
40MB Hard Drive
4MB of RAM Expandable to 10MB
Supports 7 SCSI Devices
Built-In Display • Appletalk Built-in
#1713497

\$883

Apple® Macintosh® IIvx™ 4/80 512K VRAM



The Apple® Macintosh® IIvx is the newest member of the modular Macintosh family. It offers affordable power, speed, and flexibility in a desktop Macintosh. The Macintosh IIvx is ideal for users who seek faster performance, more memory, and future expandability. System memory can be expanded from 4 to 20 megabytes. It comes equipped with a math coprocessor and cache card for increased speed. And it can be equipped with an internal CD-ROM drive, for instant access to thousands of volumes of information stored on CD.
Monitor & Keyboard extra.
#1738487

\$2399

Home of Fast, Friendly,
Courteous Service

Fry's

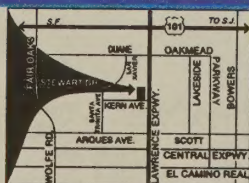
Prices good through
March 1, 1993

STORE HOURS:
MON-FRI
8AM-9PM
SATURDAY
9AM-8PM
SUNDAY
9AM-7PM

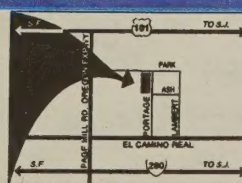


VISA AND
MASTERCARD

CORPORATE P.O. FAX #



SUNNYVALE
1177 Kern Ave.
(408) 733-1770
(408) 735-6800



PALO ALTO
340 Portage Ave.
(415) 496-6000
(415) 496-6060



FREMONT
440 Mission Ct.
(510) 770-FRYS (3797)
(510) 770-3700

Limit Rights Reserved
Not Responsible For
Typographical Errors

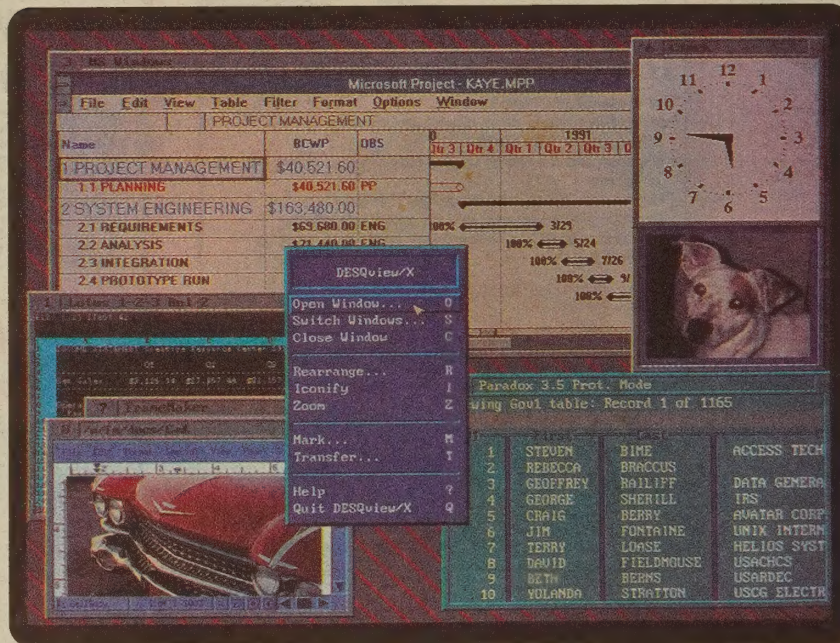
Turn your measly PC into a graphical workstation.

Looks the Way You Want

DESQview/X supports sculptured menus, customizable backgrounds, graphic buttons for launching programs or sets of programs, icons and online context-sensitive help to make computing easy and fun. If you are a DESQview user, you'll find DESQview/X very familiar, with an improved look.

Multitasks DOS & Windows Programs

Quarterdeck is the acknowledged pioneer in multitasking and DESQview/X gives you high performance multitasking, with graphical DOS and MS-Windows programs running side-by-side.



Works the Way You Want

Move immediately from one program to the next. Mark and transfer text. Define keystroke or button-driven macros. Set up sets of programs to open together at a keystroke or mouse click so you're ready to work on your projects. You can change menus, add sub-menus. Change commands. What's more, you can specify window size and color. And if you are using DOS text programs, you can set them up so that the font changes size as you change the size of the window. We call this feature scalable DOS windows (see the Lotus window on the right side of the screen).

DESQview/X is a powerful, efficient environment for increasing productivity.

DESQview/X gives you an efficient graphical multitasking windowing environment with a doorway to the future

Serious PC users, rejoice.

At last. For everyone waiting for a GUI (graphical user interface) that doesn't demand a major sacrifice in speed and hardware overhead, we present The Answer.

DESQview/X is a joy to use, with its editable pop-up menus, customizable backgrounds and icons. With its built-in Adobe Type Manager, it gives you highly readable scalable DOS windows. It gives you mouse control and keyboard equivalents for every command. It lets you define keystroke macros to speed repetitive tasks. File management and mark and transfer. It gives you 8514/A, Super VGA and DGIS high resolution graphics support for great detail and more windows. Plus maximum memory usage with our best-selling QEMM-386 memory manager—included with DESQview/X.

And for all this power, it needs only a 386 or 486 PC with 4MB RAM and 40MB hard disk.

Quarterdeck Office Systems, 150 Pico Boulevard, Santa Monica, CA 90405 (310) 392-9851 Fax (310) 314-4219

Welcome to the windowing, multitasking graphical user environment that transforms the software you already own.

Qty	Product	5-1/4	3-1/2	Each	Totals
	DESQview/X			\$275.00	
	DESQview/X Network Mgr. (TCP/IP)			\$200.00	
	OPEN LOOK interface			\$200.00	
	OSF/Motif interface			\$250.00	
Shipping & Handling \$10 (Canada & USA only)					
California Residents add 8.25%					
Grand Total					

Yes! Please Send:

Payment method: ☐ Visa ☐ MasterCard Expires: /

Card #

Name

Address

City State Zip

Or call (800) 354-3222 for faster service
Please allow 3 weeks for delivery

Registered users of Quarterdeck products are eligible for a special offer. Call (800) 354-3222 7AM-5PM PST.

Quarterdeck

CompUSA

San Bruno (415) 244-9990
Santa Clara (408) 554-1733

Fry's Electronics

Sunnyvale (408) 733-1770
Palo Alto (415) 496-6000
Fremont (510) 770-3797

800-Software

Berkeley (800) 888-4880

PC by Root

San Mateo (800) 347-0343
San Francisco (415) 923-0343

©1992 Quarterdeck Office Systems. Trademarks are property of their respective owners.

